

## Window Panes of Translucent Stone

*By Eugene Clute*

❖ I N the Monastery of St. Luke of Stiris, in the province of Phocis on the Gulf of Corinth, which is one of the finest monuments in Byzantine architecture of the eleventh century, there are many window openings filled with slabs of a material that the Greeks call phengites, "the gleaming stone." This is probably the oldest remaining example of the early use of translucent stone windows. The slabs are carved with designs composed of symbols, geometric motives, and grillage of foliage. Some are carved on both sides and some on only one side. The material is not over  $1\frac{3}{4}$  in. thick and it is reduced to  $\frac{1}{2}$  in. in the deepest portions of the carving. The light comes through in a soft effulgence.

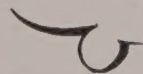


Of the many very beautiful windows of translucent onyx, marble, or alabaster in Italy, those in the Church of San Miniato, Florence; those in the Cathedral of Orvieto; and those in the Church of St. Paul Without-the-walls in Rome are especially noteworthy. In San Miniato there are five large rectangular embrasures in the upper part of the apse which are filled with a mottled translucent stone. The windows present a marvellous play of changing tints of gray and rose that ties in perfectly with the white, gray, and black of the marble walls, and provides a foil for the colorful marble, frescoes, and the Cosmati mosaic ornamentation with which the apse is enriched. The many windows of translucent stone in the Cathedral of Orvieto are rich in ever-changing color, ranging through various soft yellows and orange browns. Though the stone windows in the Church of St. Paul Without-the-walls are of recent origin, they are very beautiful and admit a soft glow of golden light that contributes much to the beauty and charm of the interior. These slabs were installed to replace glass shattered by an explosion during the World War.

But we do not need to go so far afield, for there are windows of gleaming stone right in our own country, though they are few. In St. Bartholomew's Church in New York City, of which Bertram Grosvenor Goodhue was the architect and to which Mayers, Murray & Phillip have made additions, there are some of the finest examples to be found anywhere.

At the ends of the narthex of St. Bartholomew's there are semicircular pierced grilles of amber onyx of geometric design. The one at the south end is particularly interesting. The afternoon sunlight causes it to glow with an inner fire like a ruddy sunset. It is as though the stone itself were a source of light. Passing under this grille, one enters the chapel, where the clerestory windows are filled with onyx slabs with superimposed geometric grille work of the same material. But most marvellous of all are the tall round-arched windows in the upper part of the apse of the church itself. There are five of them, about twenty-one feet in height and nearly four feet in width, filled with amber onyx. They are given design character by geometric grilles of onyx backed by thin slabs of this material. The light is diffused in a mysterious radiance of varied tones. In the late afternoon the grilles are silhouetted in black against the golden amber light in the semi-darkness of the apse.

These windows have dignity, beauty, and richness, in keeping with the colored marbles of the columns in the sides of the embrasures and with the magnificent coloring of the gold-and-polychrome enamel mosaic ceiling of the half dome above and of the sanctuary arch. But they do not compete with these features as stained glass, itself rich in color, might.

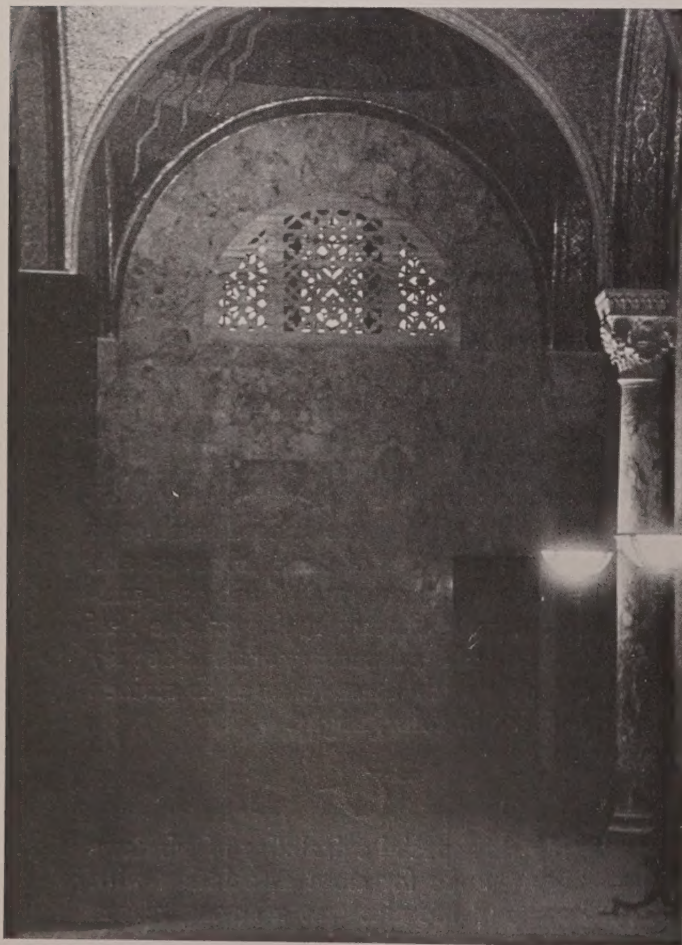


Probably this special suitability of windows of translucent stone for close association with rich marbles and mosaics was a strong reason for their frequent use in the old Byzantine



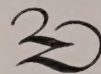
churches; another reason was the relatively undeveloped state of the art of stained glass at the time. The former is an excellent reason for employing windows of gleaming stone today in such a relationship to marbles and mosaics as in St. Bartholomew's. The grilles are built as shown in a detail herewith. Recesses in the stone jambs and a pocket at the top permit the installation of the upper sections of onyx by raising them above their final position and then letting them down into place. There are five saddle bars of bronze extending across each window to support the weight of the stone and to give rigidity. These bars are concealed in recesses cut in the edges of the sections of onyx and are invisible because the material diffuses the light around them. Their ends are built three or four inches into the masonry at the sides of the windows. Each panel of the design, containing a complete circular motif, is composed of four sections of onyx. There are five of these in each window and a bottom panel made up of two sections. The slabs were cut across the grain of

*Onyx slabs with superimposed grilles of the same material in St. Bartholomew's Church. Mayers, Murray & Phillip, architects* Samuel H. Gottscho



the stone, at right angles to its natural bed. This cutting brings out veins instead of the clouds that appear when such a stone is cut with the grain. The thin slabs between the grilles were sawn about  $\frac{5}{8}$  in. thick, then rubbed down to  $\frac{3}{8}$  in. and polished. The parts are firmly joined together with a transparent cement.

Seen from the outside, the outer grilles are highly effective features of the exterior, contributing to its architectural dignity and beauty; their creamy color tones in well with the warm yellows of the brick walls and the buff of the stone.



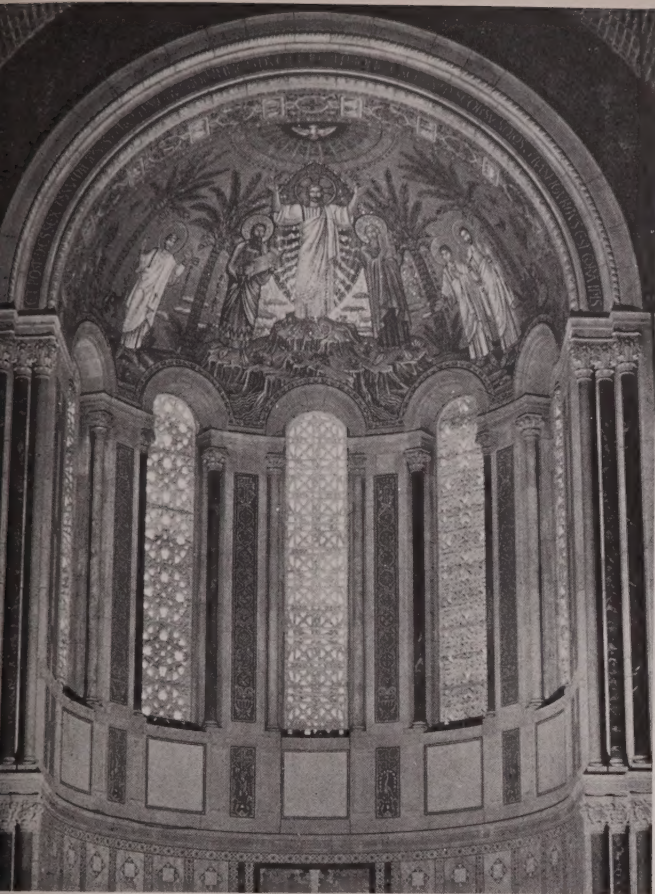
Among the most unusual and beautiful features of the Nebraska State Capitol, the crowning work of Bertram Grosvenor Goodhue's life, are the windows of translucent onyx set in tracery of creamy white marble.

Henry Bacon has made use of a translucent marble ceiling light of great size in the main hall

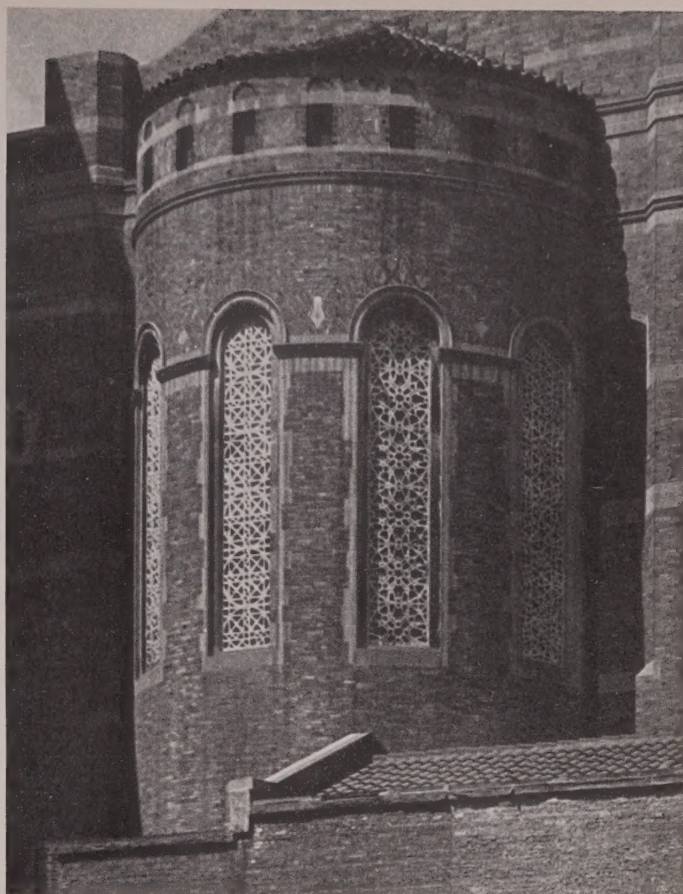
*Ceiling panel of translucent Alabama marble in the Waldorf-Astoria, artificially lighted from above.* F. M. Demarest Schultze & Weaver, architects







Paul J. Weber



Samuel H. Gottscho

*In the upper part of the apse of St. Bartholomew's there are five windows, twenty-one feet in height, filled with amber onyx from Norie, Mexico. Details of the construction are shown on page 244. Mayers, Murray & Phillip, architects. Craftsmanship by George Brown & Company*

of the Lincoln Memorial, Washington, D. C. The soft radiance that comes down upon Daniel Chester French's great bronze figure of Lincoln, and upon Jules Guerin's allegorical murals around the walls, is produced by light filtered through slabs of Alabama cream marble set in the heavy bronze framework of the panelled ceiling. There is a glass skylight above. These slabs of marble are 4 ft. 6 in. square and  $\frac{3}{4}$  in. thick. It is said that they were immersed for twenty-four hours in a tank of oil, kept hot by means of steam pipes, to produce the requisite translucency.

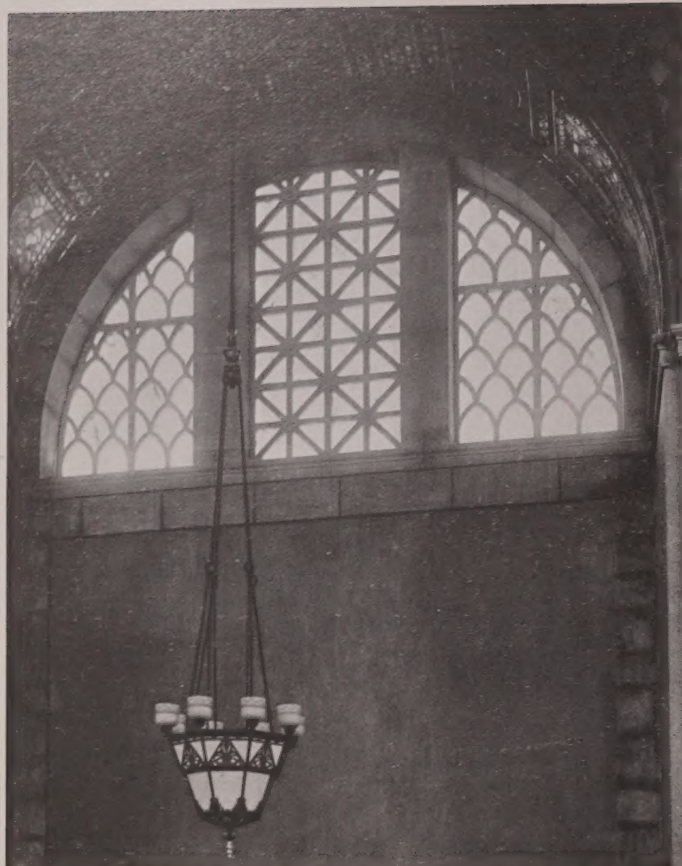
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In the grand foyer of the Waldorf-Astoria Hotel, New York City, there is a large ceiling light composed of translucent stone slabs set in the panelled ceiling. This ceiling panel is of an Alabama marble that is of a cool white, owing perhaps to minute veins of blue; it is very even in color and highly translucent. Here Schultze & Weaver have employed several rectangles, one

within the other, stepped up to an oblong central panel. Frames of ornamented nickel-silver, suspended by hangers, support the marble slabs. Electric lamps—blue, amber, red, and white—are installed above so that varied color effects may be produced if desired.

Windows of translucent stone are spoken of in many descriptions of buildings as windows of alabaster, even when they are of marble or onyx. Though marble is a form of calcium carbonate, onyx is siliceous stone and alabaster is a hydrite of calcium sulphate. While this indiscriminate use of the term alabaster is contrary to the present narrow meaning of the word, there seems to be some justification for it, for this word seems to have been derived from a Greek word, *alabastron*, meaning "without a handle," a term applied to the little handleless amphora-shaped vases that were used to hold perfumes and the like. These vases were commonly fashioned from some translucent stone, perhaps not always alabaster in the present-day sense. Then the name of the object is thought to have been transferred to the material.





J. B. Franco  
Studio

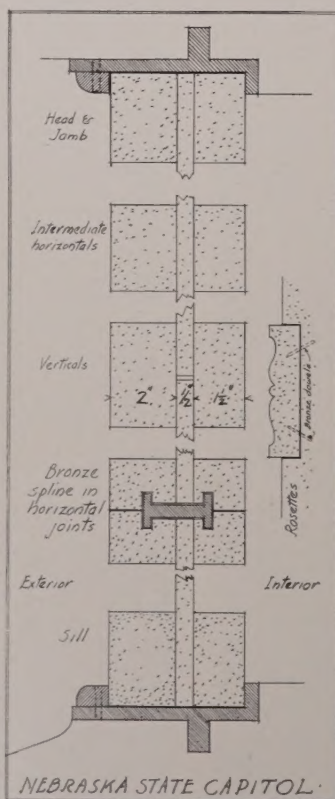
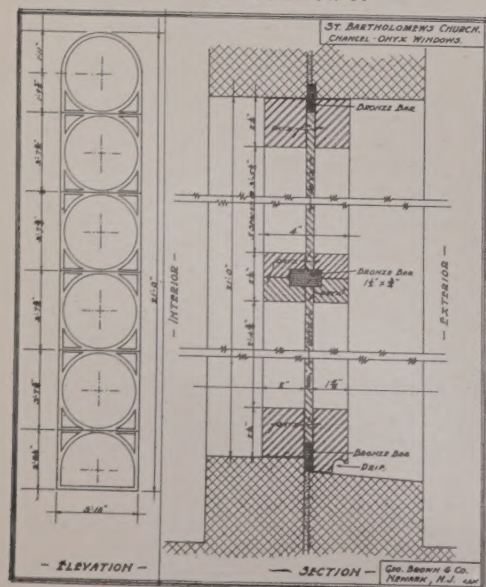


J. B. Franco  
Studio

Nebraska State Capitol windows, in which White Utah onyx is set in a tracery of White Colorado Yule marble stained a light amber. (See detail below.) Bertram G. Goodhue; Bertram G. Goodhue Associates, architects. Craftsmanship by Sunderland Brothers Company

It seems strange that windows of translucent stone are not more often used in fine buildings, for the alabaster from Volterra in Italy is well suited to this purpose, is readily obtainable at a cost within reason, and is very easily worked. It is this material

Below is a detail showing the construction of the apse window in St. Bartholomew's.

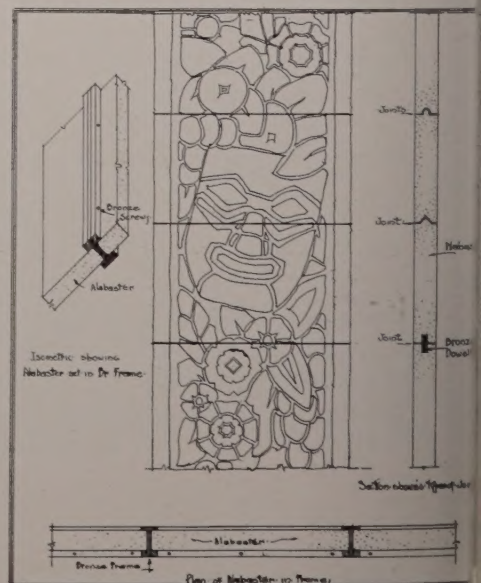


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from which are made the beautiful windows in the Chapel of the Sacred Heart, Convent of St. Joseph, at Brentwood, Long Island. There is a detail photograph herewith, and other photographs of these windows were published in the issue of this magazine for Oc-

Below, typical details of the construction for the alabaster window in the Convent of St. Joseph







*Examples of the possibilities in colored inserts in white alabaster, the inserts bearing designs in incised lines. Designed by E. J. Schmitt. At left, amber alabaster in white; centre, rose-colored alabaster in white; right, green alabaster in white*

tober, 1931. There are twelve windows, each 3 ft. 8 in. by 8 ft. 8 $\frac{3}{4}$  in. These windows and other alabasters on and under the balconies of the apse are carved with ornamental and symbolic motives of great richness. As the interior of the chapel was inspired by the Early Christian and Byzantine monuments of Italy, principally

those of Ravenna and Florence, rich marbles, murals, and mosaics play an important part in it, and it was felt that filling the window opening with translucent slabs of alabaster would produce the soft light needed and avoid the introduction of conflicting colors in the windows. To prevent any possibility of monotony these were



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Vannatta,  
Lake Wales, Fla.

© 1929,  
Vannatta,  
Lake Wales, Fla.

*Interior and exterior effect of a window in the Bok Singing Tower, Lake Wales, Fla. Milton B. Medary, architect. A variation of translucence is secured through Lee Lawrie's sculptured tracery. The white Georgia marble is six inches thick at the maximum*

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*Portion of a window of ivory toned Volterra alabaster, Convent of St. Joseph, Brentwood, Long Island. Murphy & Olmsted, architects. Craftsmanship by Conrad Schmitt Studios*

*Cartoon for one of the windows of alabaster in the Chapel, Convent of St. Joseph, Brentwood, Long Island. Designed by Paul A. Goettelmann; Murphy & Olmsted, architects*

*Detail of "Christ the King," part of a window in the Convent of St. Joseph, Brentwood, Long Island. Designed by Paul A. Goettelmann. Craftsmanship by Conrad Schmitt Studios*



carved. They are rich in color, being of varied ivory and amber tints with a suggestion of rose; the alabaster, naturally white, has been impregnated with the desired coloring.

The chief beauty of this material is the soft glow of light by day or night. When viewed from within at night it appears akin to the mysterious will-o'-the-wisp or the St. Anthony's lights that appeared upon the rigging of old sailing-ships at sea. In the daytime these windows present a never-ending succession of changes in tone and tint.

These windows are composed of slabs  $\frac{5}{8}$  in. thick, and as the carving, which is on the inside only, is about  $\frac{1}{4}$  in. deep, the thickness is reduced to about  $\frac{3}{8}$  in. in the background. The design is in three planes; the face of the slab, which is the face of the raised ornament; the background; and the minor detail, which is incised less than  $\frac{1}{8}$  in. As the detail section shows, these windows are divided into panels by the bronze muntins of the frames, and some are hinged to swing open for ventilation. Windows of moderate size can be formed of a single slab

each. Larger windows can be formed without muntins, if these are not desired, by joining the sections, either by means of bronze dowels or of a tongue-and-groove joint. This tongue and groove are easy to carve and, cemented together, make a joint that is not obtrusive.

Volterra alabaster of the natural translucent milky white color is very beautiful, but the possibilities of the material are greatly increased by the fact that it can be colored through and through, not only in tones of amber or ivory but like rose quartz or jade or in almost any desired color. This makes it possible to enrich windows of the white or tinted alabaster with inserts of different colors. Furthermore the inserts may be engraved with designs in incised lines.

Though windows of translucent stone have been used almost exclusively in churches, there is no need to limit them to ecclesiastical architecture. Windows of Volterra alabaster, particularly, are within the range of possibility for very many buildings other than the most monumental; for banks, theatres, hotels, and fine residences.





Photographs by  
Dick Whittington

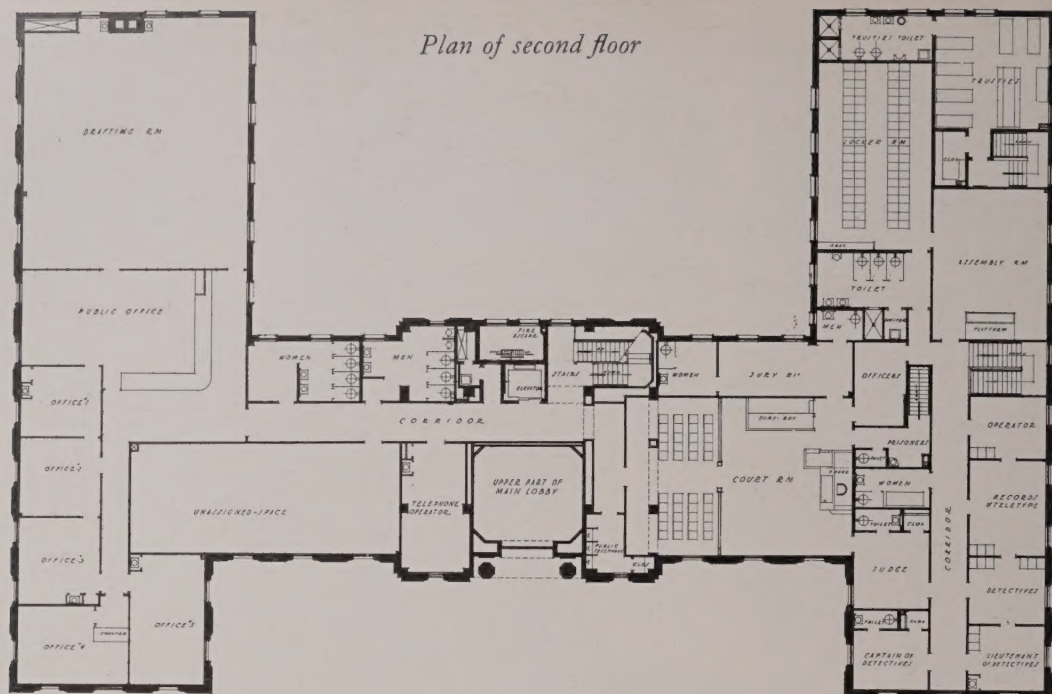
*A structure of reinforced concrete in which particular care has been  
taken in the delicacy and precision of the exterior molds*

DEPARTMENT OF PUBLIC WORKS, CITY OF LOS ANGELES;  
P. K. SCHABARUM, ARCHITECT

# Valley Municipal Building, Van Nuys, Calif.

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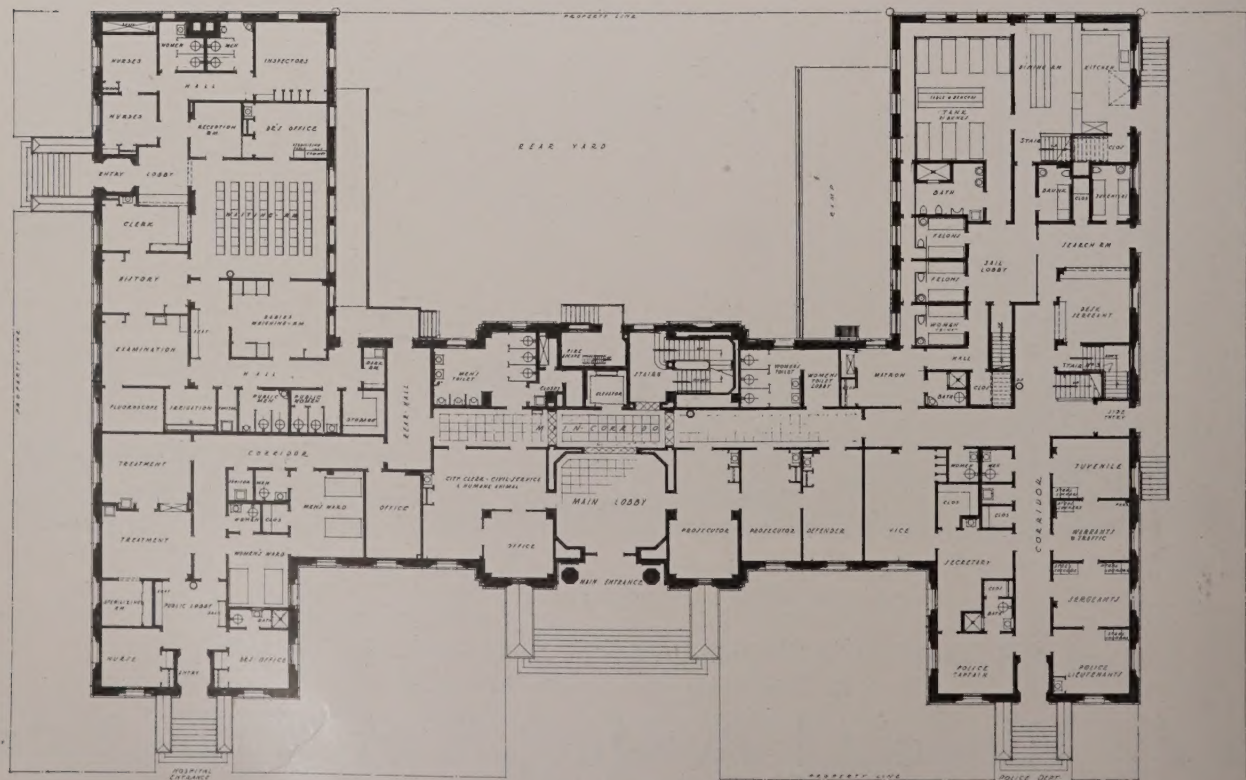




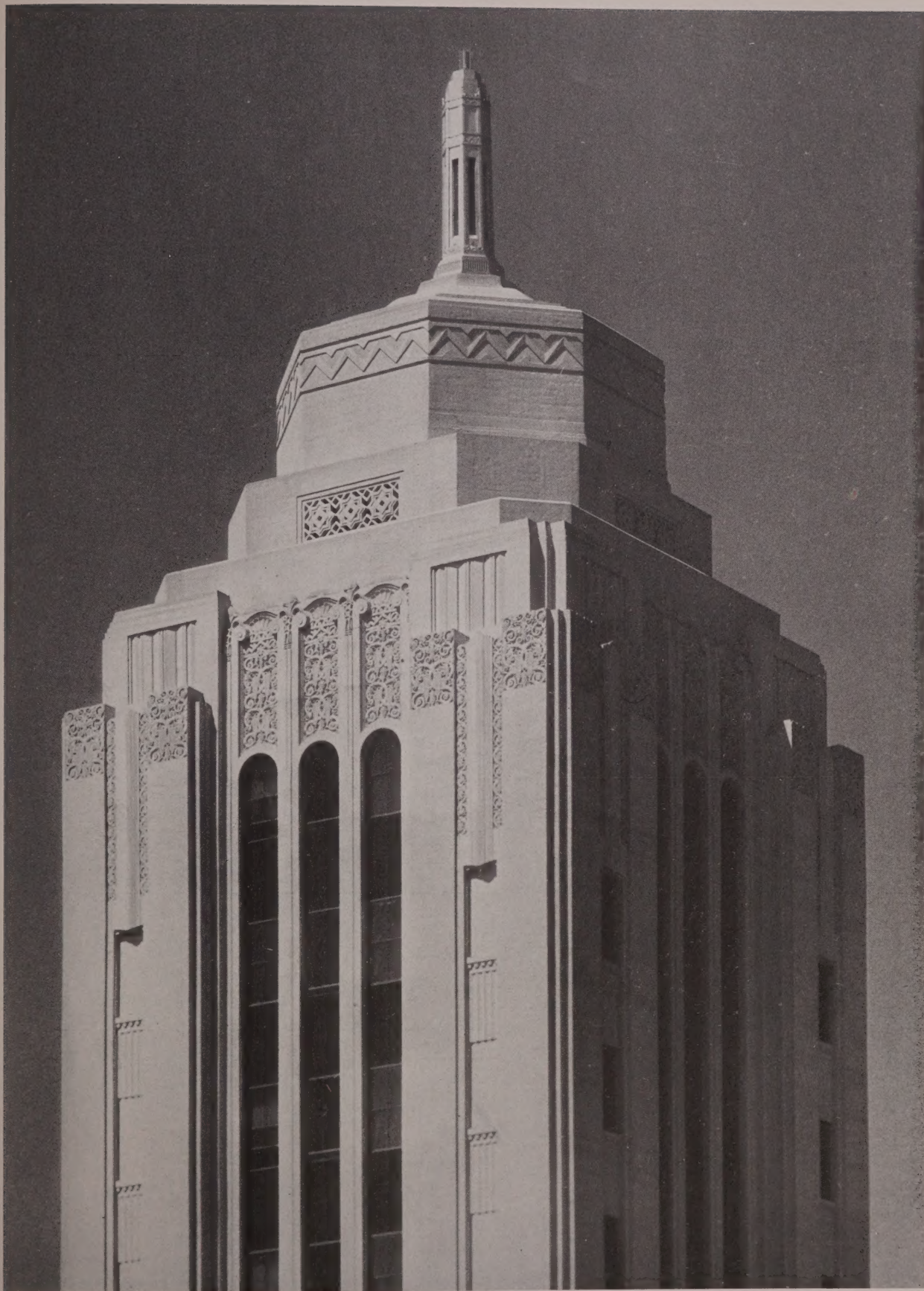
Plan of second floor

*A multitude of widely varying civic needs has brought about a plan that is striking chiefly in its lack of the monumental, grand-manner flavor we usually associate with our public buildings.*

*In the plan of the first floor, below, the left wing is given over to a Department of Health, the right wing to the Police Department. A ramp leads down from the rear yard to automobile parking space in the basement*







*Detail of the tower top, where the cast ornament reaches its greatest florescence*

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*Detail of the main entrance. The sculpture panel here and others over the wing entrances are by Harold F. Wilson, sculptor. An inscription on the back-*

*ground of the panel above reads: THE PUBLIC OFFICERS ARE THE SERVANTS AND AGENTS OF THE PEOPLE TO EXECUTE THE LAWS THAT THE PEOPLE HAVE MADE*



*Entrance detail of the*

*Police Department*





*The church is located on Thomas Circle at the intersection of Massachusetts Avenue and Fourteenth Street, N.W. It is built throughout of limestone, the roof of the little dome being of bronze, the weather-vane gilded*

*Photographs by Drix Duryea*

OFFICE OF JOHN RUSSELL POPE, ARCHITECT  
National City Christian Church, Washington, D. C.

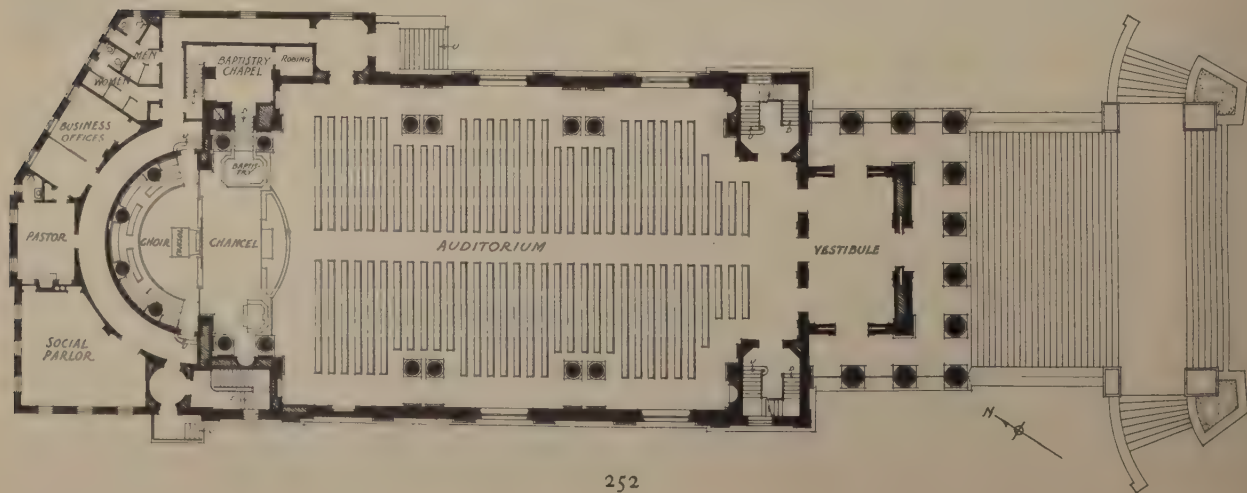
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The general color scheme of the interior is a combination of the stone gray with light tones of blue and gold in the coffer. The lighting fixtures were designed especially to give the effect of a visible light through low-power candle bulbs with an added stronger light cast directly down. Pews are of walnut with blue cushions. There are several memorial windows in place, one of them to the wife of R. A. Long, who took an active part on the building committee. Nicola d'Ascenzo executed these windows, which have a large proportion of clear glass, with border and medallions in color

Plan of the main floor as built. There is an unusual feature here in the baptistry and the adjoining baptistry chapel. The photograph on page 254 shows that the height of the marble enclosure of the baptistry is such that very little more than the heads of those descending for immersion is visible from the auditorium







*Axial view of the auditorium, looking toward the apse, the columns in which are of St. Geneviève marble—a warm gray with yellow veining. Between these the hangings are of blue*

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*A view across the front of the chancel, showing at the far side the marble enclosure of the baptistry. The floor of the auditorium is carpeted in blue*



*For the pulpit a creamy white marble with gray veining has been used, with panels of St. Geneviève marble*





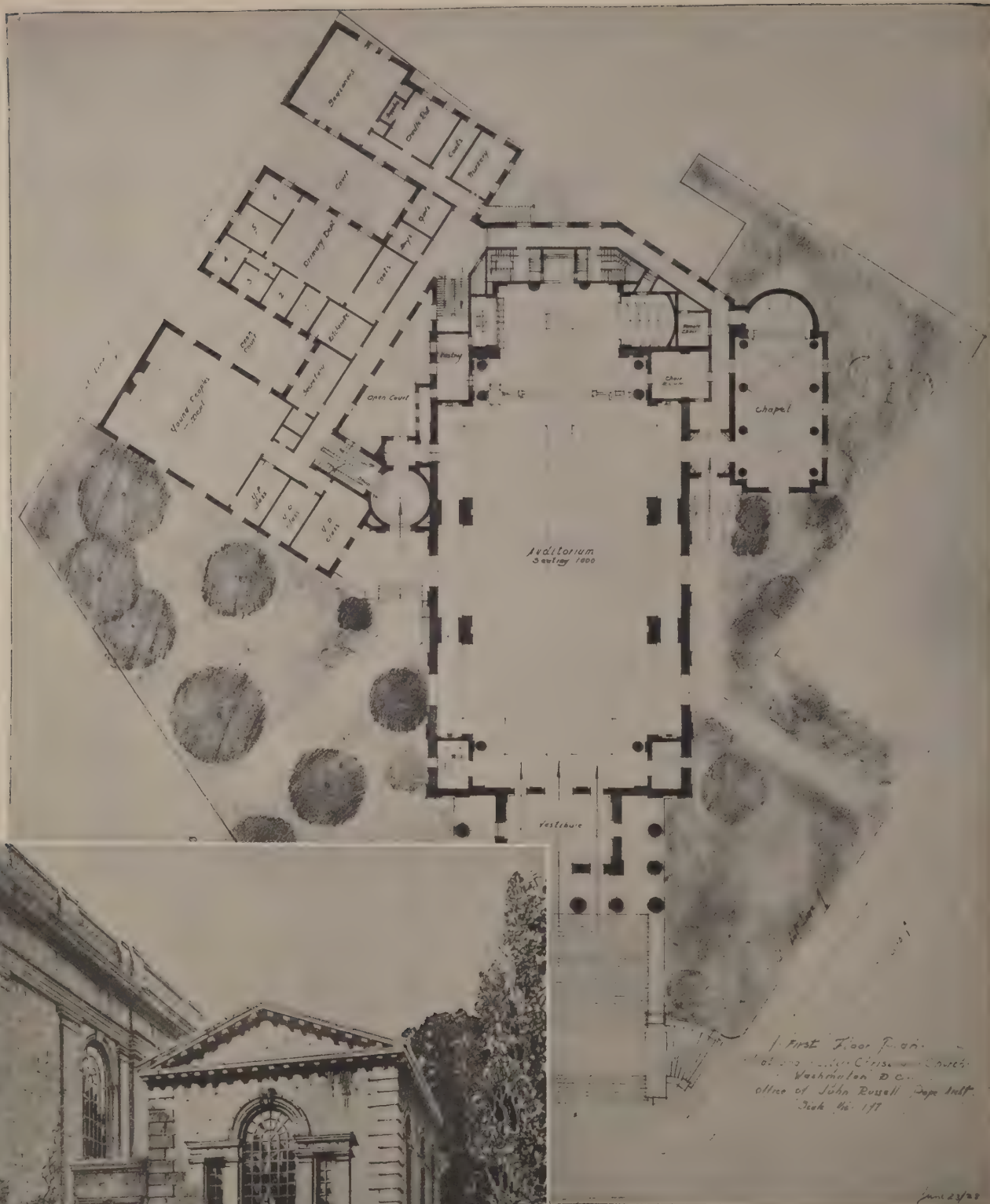


*The main entrance as seen from inside the vestibule. Doors are of walnut, floor of terrazzo with a marble border*

*The console as seen from the front. It is of walnut, framing the panel of "The Last Supper" carved by Alois Lang in lime wood*







Plan of the church and its supplementary buildings as originally projected. The parish house has not yet been built, nor the chapel, and the church itself was changed in accordance with the plan on page 252

Mr. Eggers's pencil drawing of the proposed chapel

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# The Architect in the Body Social

By *B. Charney Vladeck*

MEMBER NEW YORK CITY HOUSING AUTHORITY



*Mr. Vladeck spoke at a recent meeting of the architects selected by competition to design New York City's projected low-rental housing. His opinion of the architect seemed to us to be a sharp spur—it hurt, but it may induce action. We asked Mr. Vladeck to write it for a wider audience in the profession, and here it is.—EDITOR.*



**B**EHIND each building monstrosity, behind each tenement, behind each get-rich-quick building project, there are the brains of an architect. As I walk along the lower East Side or Harlem, or, for that matter, any slum in the city, I see in my imagination some member of the architectural profession burning midnight oil in an effort to make a maximum of people uncomfortable and unhealthy, at a minimum infringement of the law.

No modern profession has become as completely a tool of greed, selfishness, and speculation as the profession of architecture. The landowner, the builder, and the usurer tell the architect:

“Here is a small parcel of land whose inherent worth is zero; if you manage to erect on it a building that would yield a healthy income, the land will become more valuable than gold and all of us will be rich.”

So the architect proceeds to cover as much of the plot as possible. He burrows into the earth and into the sky, to make a building that will earn money, no matter how crowded and inconvenient it may be, so that the landowner, the builder, and the money man may become rich. And when they do become rich, they “influence” local, state, and federal legislation for the protection of their interests and for the perpetuation of all their crimes and follies.



Today the only solution for the terrific unemployment in architectural ranks is an extensive public-housing program on a national scale—a program for the reconstruction of our cancerous cities along modern lines. They have been doing it on the Continent since the War, and it can be done more easily and with less

sacrifice on the part of the public treasury here than on the other side. Nevertheless the same interests whom the architectural profession served so blindly and so loyally are piously opposed to all such utopias because it would show the American people the extent to which it has been robbed of the comforts and amenities of life by the organized greed of real-estate and money interests. Public low-cost housing, of course, needs public assistance. Also cheap money and cheap land. But public assistance, when not given to the rich and powerful, is “Socialism”; cheap land and cheap money, “Bolshevism.” It is this organized opposition that very efficiently keeps housing in a state of confusion. It is this opposition that keeps housing in the United States, after so many years of study and education, in a state of helplessness and disorganization. A thousand nostrums and panaceas are being offered as housing which do not contain the simplest essence of housing—and that is extensive low-cost projects and radical slum clearance.



There is still another drawback, which may seem purely technical but is important just the same. The American architect, like the average American layman, still thinks of housing in terms of houses and not in terms of homes. In the recent competition for the qualification of architects, held by the New York City Housing Authority, 278 designs were submitted by registered architects. All designs were based on a plot of twelve city blocks and were to deal with 100, 150, and 250 densities. But the overwhelming majority of the architects saw nothing but that many lots to be covered by structures. They didn't stop to say to themselves: Here I am supposed to house so many thousands of human beings. How can it be done with the



least crowding, with a maximum of privacy, with an abundance of air and sunshine, with ample provision for community recreation and park space? In one particular case the architect was puzzled over the requirement of a two-block park, and since he couldn't understand what a park is needed for in a low-cost housing project, he stuck it in a corner.

And yet a small number of competitors did display some housing intelligence, and twenty-two designs were qualified. Not that they were all entirely perfect. Some of them are somewhat hazy and illogical, but at least these men display an attitude to housing that is new: an attitude that proclaims that building for a community is something not entirely identical with building for an individual as for profit.

With our architectural background, this is very encouraging. There was a time when

architecture was the highest expression of a nation's culture. The brains of the architect were the focal centre of everything the nation had achieved in thought, in beauty, and in its standard of living. It was understood and accepted that the most important building is for the national collective, and that the spirit of architecture can be best expressed in public enterprises. It is time the profession reverts to its original function and natural destiny. By encouraging public enterprise in housing and construction, by studying the problems of community planning and community building, by giving thought to the necessity of giving all the people the benefits of modern science and achievements in construction, architecture will again become a living profession and a great force in the cultural development of our city and our nation.



H. H. S.

*Cliff dwellings at Rio de los Frijoles, near Santa Fé, N. M.*





*Sculpture at the end of narrow garden path in Italy*

# Garden Terminals



FROM A COLLECTION  
OF PHOTOGRAPHS IN  
THE OFFICES OF  
WILLIAM PITKIN, JR.  
AND  
SEWARD H. MOTT  
LANDSCAPE  
ARCHITECTS



*A more elaborate terminal for a larger garden walk at Ilford, England*

*Balustrade stopping a vista at a transverse axis,*



*A more elaborate architectural feature as the terminal, Wilton House, England*

*Lady Astor's Italian memorial garden, Cliveden, England*

*An elaboration of the niche motive, Dropmore, England*



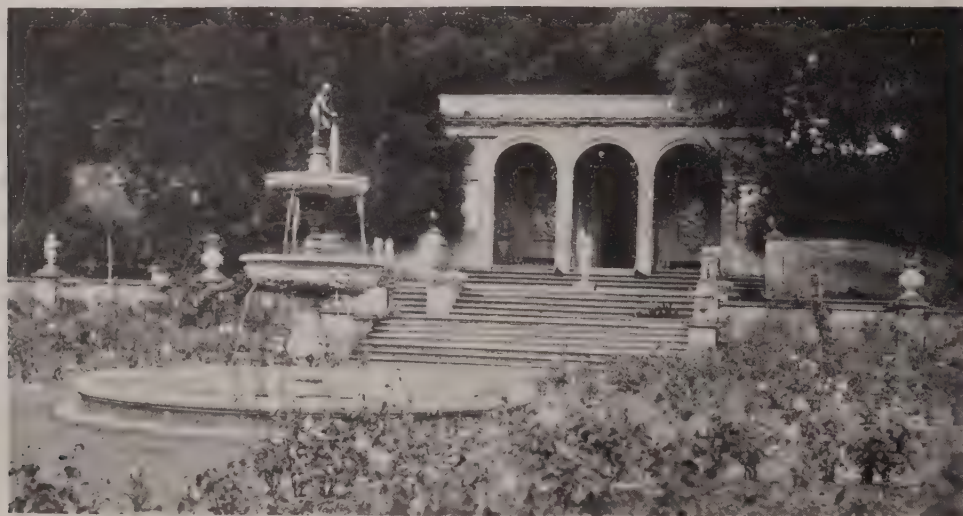




*Cimbrone, Ravello. The terminal is not necessarily en axe*



*Isola Bella, Italy—another instance of the terminal off a*



*The added value of steps for an elaborate architectural terminal,  
Wilton House, England*



*Villa Falconieri,  
Frascati, Italy*

*A minor terminal  
on the Farnese  
Palace, Caprarola,  
Italy*

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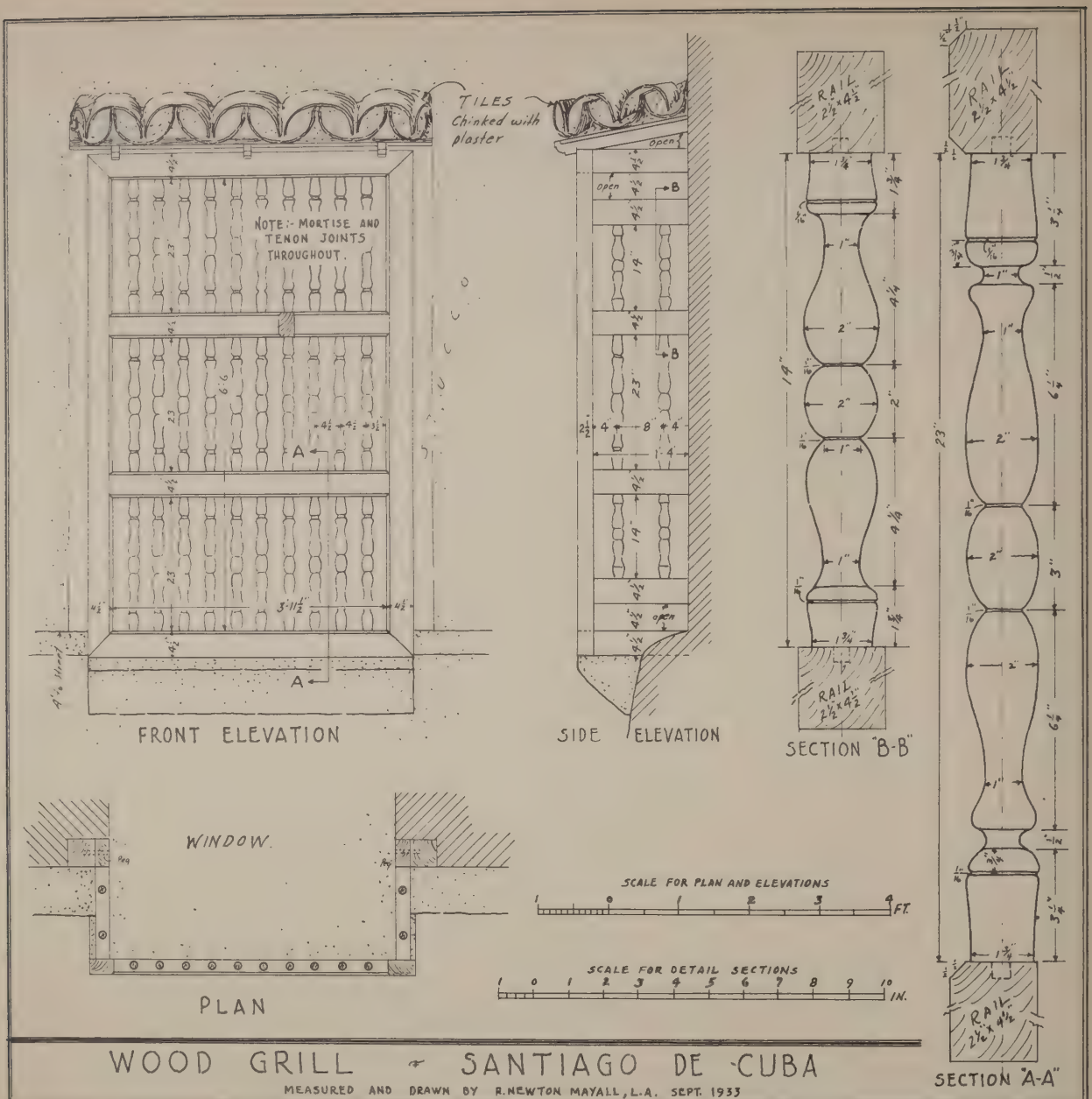
*Measured drawing of this window will be found overleaf*

MEASURED AND DRAWN BY R. NEWTON MAYALL

# Wood Grilles of Santiago de Cuba

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*Photograph of this window will be found overleaf*

ARCHITECTS and students travel far afield and dig into the past with a passion akin to that of the archæologist, in their search for source material. All too often they follow the beaten paths made famous by illustrious predecessors. Mallorca, Madrid, Florence, Paris, Munich, and many other places have been kept under close observation for years.

The New World holds much that is as yet uncharted; much that is of great age, when compared with our own young portion; much to rival the charm of the Old World. It is a fertile field for those who wish to partake of its riches.

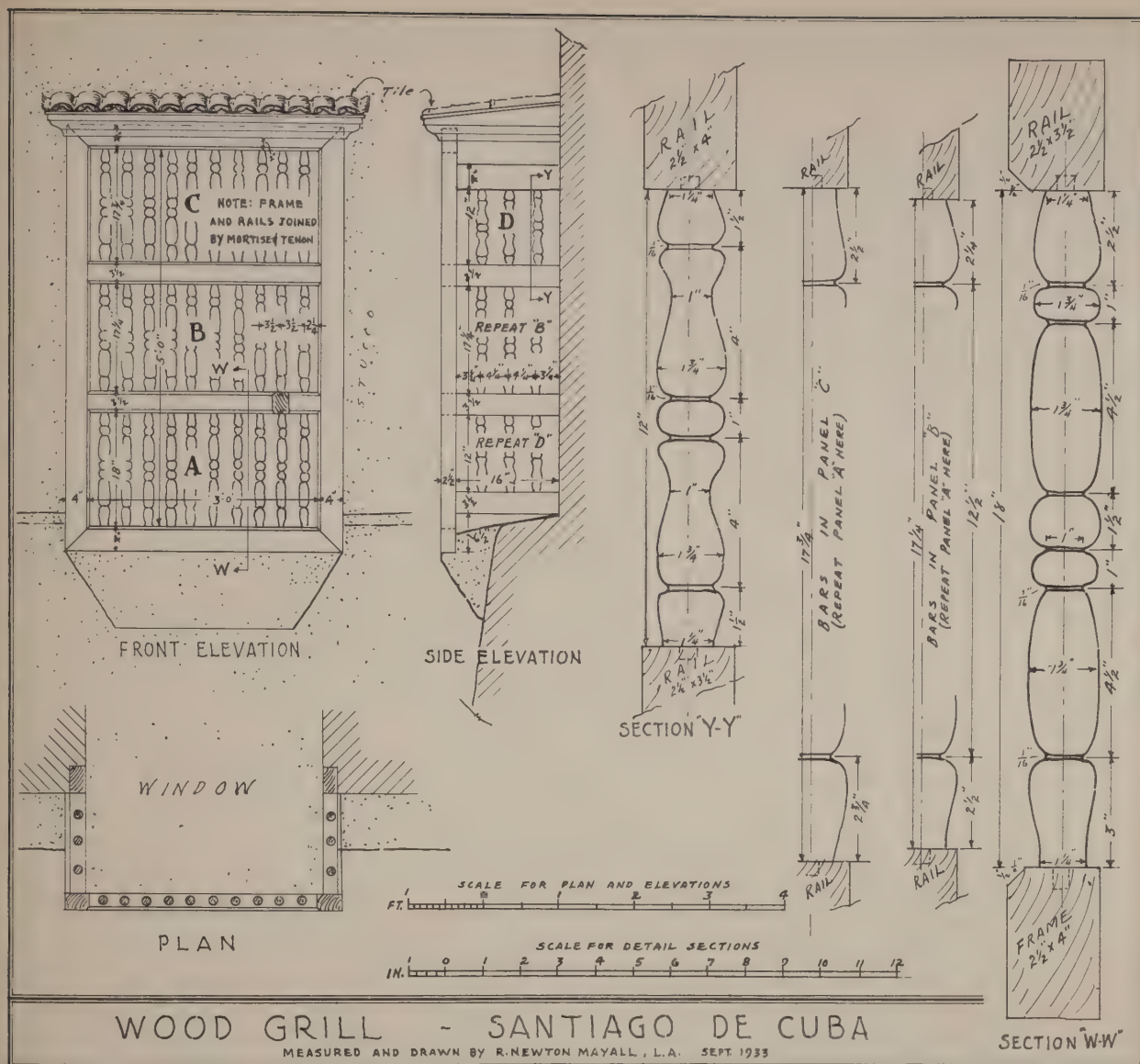
Perhaps we have forgotten that more than

one hundred years before the founding of the Jamestown and Plymouth colonies, the first permanent settlement in the New World was made at Santo Domingo, in 1493.

Next door to us lies the Island of Cuba, at the western end of which is situated Habana, "The Paris of the West," and the tourist's paradise; at the eastern end is located the city of Santiago—a little bit of Spain transplanted in the New World.

Santiago might almost be termed the "Forgotten City." Founded by Velasquez in 1514, it was the capital of Cuba from that time until 1551, when the government was moved to Habana. During this brief period it was the





*Photograph of this window will be found overleaf*

centre of social, commercial, and political life in the New World, which was responsible for its extremely rapid growth. Its subsequent decline was a natural result, and today we find it sprawled over the side of a hill, about seven miles inland from the south coast, at the head of a landlocked bay.

The bay and city are surrounded by high hills and mountains, the whole resembling a gigantic bowl. The scenic beauty of this portion of the island far exceeds that of the comparative lowlands to the west, with which we are all so familiar.

The quaint narrow streets, lined with low one-story houses, typically Spanish in character, whose irregularities add charm and interest to the city, in part attest to its antiquity. When

looked up to from the harbor or down upon from the surrounding heights, the polychromatic walls and roofs glistening in the sunlight resemble a mammoth kaleidoscope. Balconied casement windows above one's head take one quickly back into the romantic past and remind one of the not too unromantic present. The city abounds in fine examples of early iron work, and wood grilles are found protecting many street-level casement windows.

The wood grilles are fascinating; no two are alike. Many of them are over 300 years old, and in an excellent state of preservation. They are met with in Turkey, Spain, and Mexico, to some extent; but in and about Santiago they are common. The architect and landscape architect will doubtless find them of great interest.





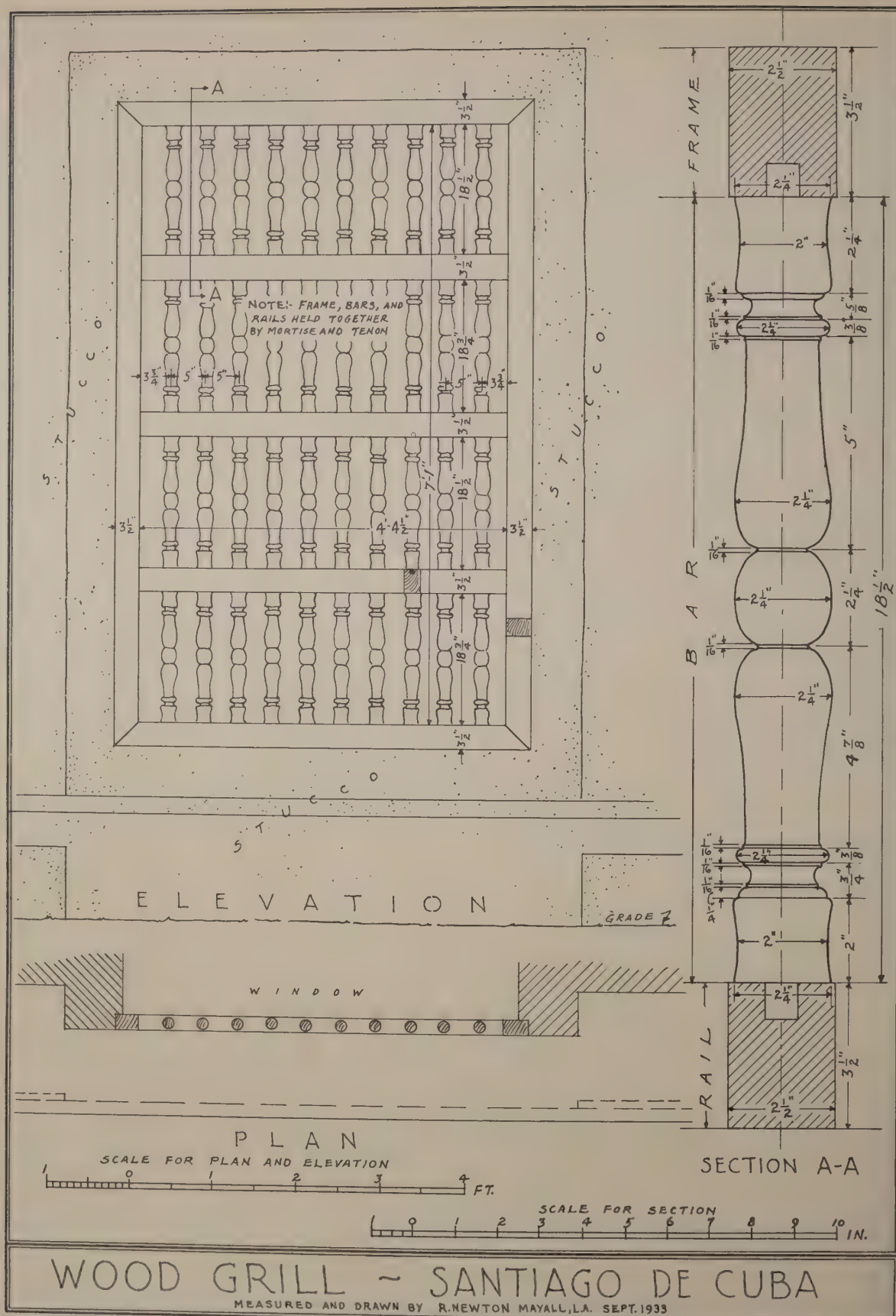
*Measured drawing of this window will be found overleaf*





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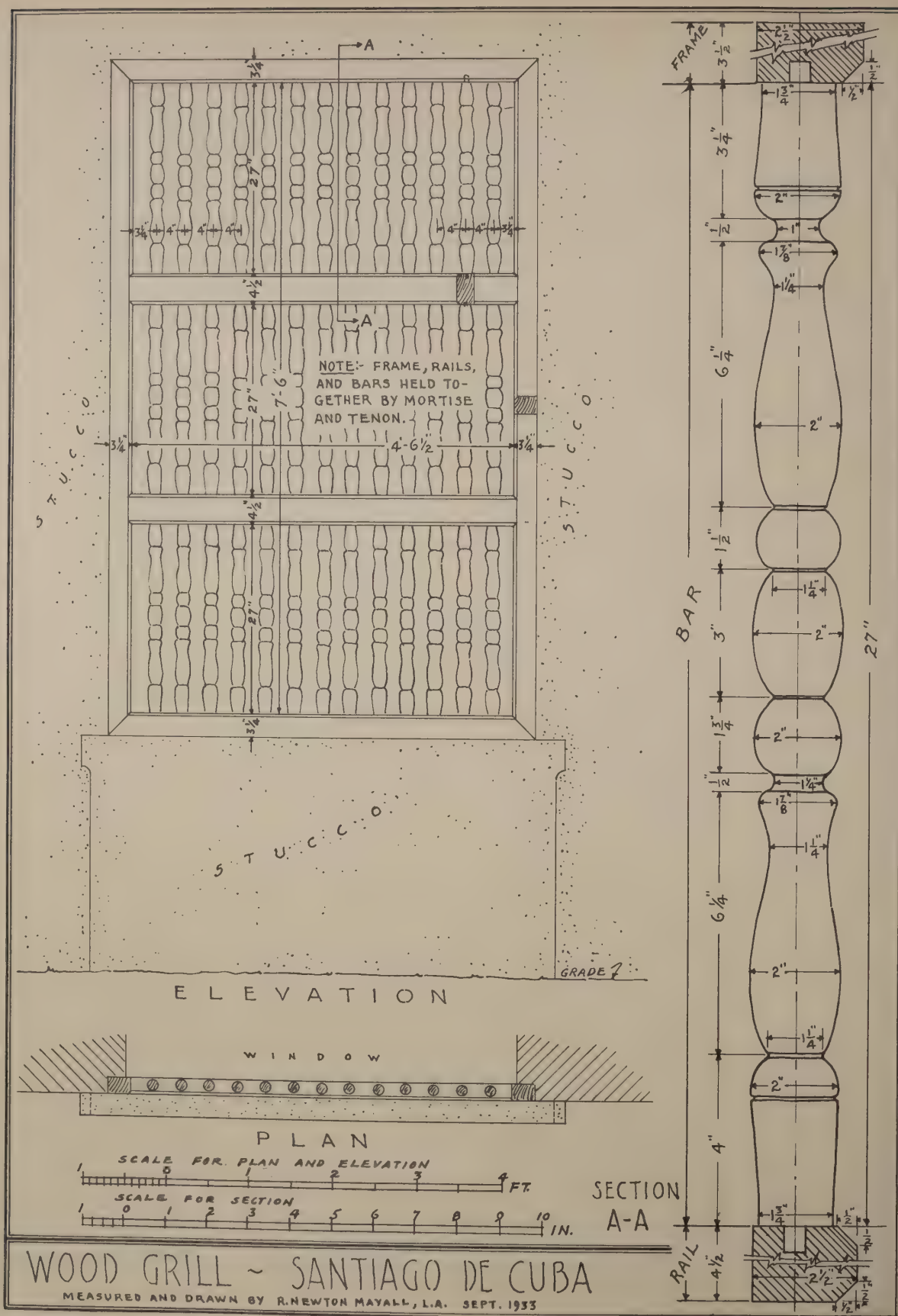
Photograph of this window will be found overleaf





*Measured drawing of this window will be found overleaf*





Photograph of this window will be found overleaf



# Better Practice

By *W. F. Bartels*

## —LOCATION OF BOILER

IT is usually advisable to place the heating plant as centrally as possible, to aid in the even distribution of heat. However, in conjunction with location some thought must be given to the supply of fuel that is to be used. With gas it means only some additional piping from outer wall to centre of basement; with oil the run of the pipe should not be too long, while with coal there is the question of where it can be delivered on the outside and how much additional labor is necessary to get it to centrally located bins. It is well to locate the boiler a sufficient distance away from all walls, so that all parts of it, including the smoke breeching, may be easily cleaned. This is particularly important where there are tubes to be cleaned, so that there is room to draw the cleaning brush through them. Then, too, it is better to locate the boiler in a part of the cellar where there will be no necessity to make a pit for it in order to obtain sufficient headroom for the proper piping. Of course if it is necessary to do this the pit must be large enough so that there will be sufficient room for firing and drawing the ashes. If the ground is not dry there must be proper provisions for water-proofing and draining it. A pit under the boiler, however, has its merits, as it allows more air under the grates with less likelihood of their burning due to ashes piled up under them (Fig. 1A). One thing often overlooked is the air supply for the boiler. To enclose a boiler in a closed room is poor practice. A window or an air duct should be provided so that the fuel may be completely burned. Lack of fresh air will result in a waste of fuel.

## HEATING

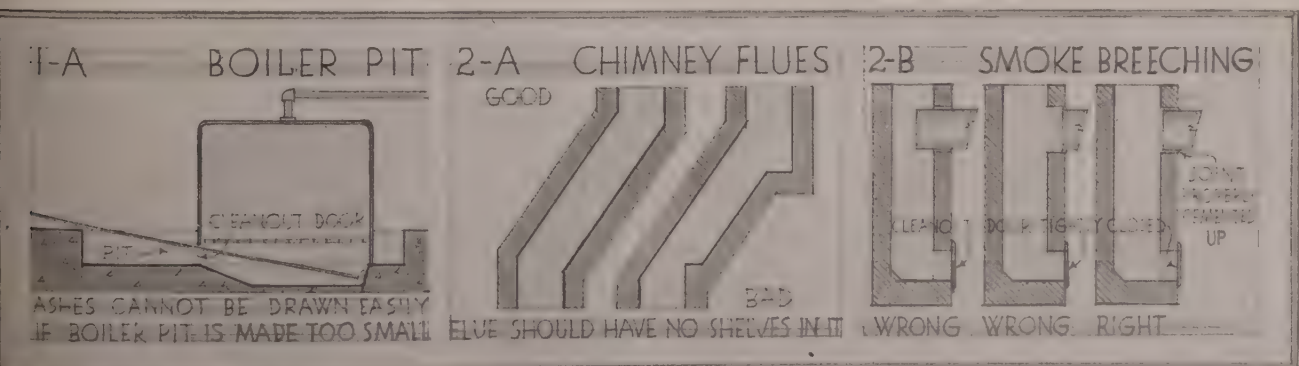
### 2—CHIMNEY

From the standpoint of the tenant the chimney must be located so that it does not run through any part of the building where its heat may be a disadvantage; this is a sound reason for its complete insulation. If not properly erected a faulty chimney becomes a great fuel waster; it may be a source of danger if the flue linings (these should never be omitted) are not tight. There should be no cracks in the lining. The area of the flue should be the same all the way up the chimney, with no shelves or offsets to catch any soot (Fig. 2A). The size of the chimney should be governed by the boiler's requirements, and the boiler manufacturer's directions as to size should be implicitly followed. Do not economize—or rather, it might be said, do not be wasteful—by making the flue size too small. It is best to have a chimney so located that there are no long ducts in the cellar, and it is better to have long sweeping turns than to have sharp bends which will slow down the flow of the escaping gases. If more than one boiler is used, it is advisable when possible to have a separate flue for each boiler. All smoke breeching must be tight, and it is economy in the long run to have it made of a sufficiently heavy gauge so that renewal is not necessary each season. All cleanouts must be tight. Where the breeching enters the chimney, it is better to have it slightly behind the edge of the flue lining rather than projecting into the chimney. Nor should the breeching

be so near the outside face of the chimney that there may be danger of gas leakage due to the movement of the breeching (Fig. 2B). The height of the chimney is very important. It must be of sufficient height so that neither adjoining buildings nor peculiar air currents due to them can cause a down draft (Fig. 2C). A dependable draft will usually be the natural result of a properly designed chimney.

### 3—BOILER TYPES

In general, boilers are cast iron or steel. Some steel boilers come in narrow sizes, but in general it is necessary to have a considerable wall opening through which they can be delivered to the cellar. Cast-iron boilers made in sections have the advantage that they may be carried through the average hallway into the cellar. This is an advantage in a building already erected. The claim, however, concerning the ease by which damaged sections may be renewed is slightly overestimated. The time necessary to install a new section will be worth almost as much as it would cost to install an entirely new boiler, and then one has the satisfaction of an entirely new product. The cast-iron type of boiler resists corrosion but cracks easily upon lack of water. The steel boiler resists cracking and has for its further protection a fusible plug in case of absence of water. Some cast-iron boilers now are supplied with fusible plugs. There are now on the market two steel boilers which can be installed wherever a cast-iron boiler can be located. The one is a steel boiler which is bolted together, while the other one is welded together on the job. Thus, if a steel





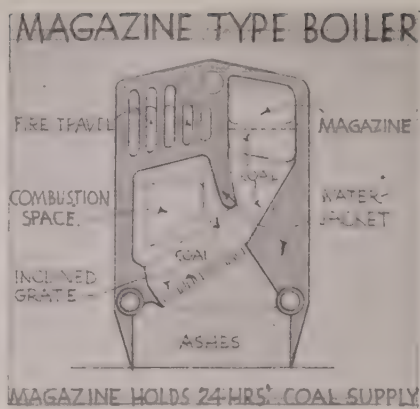
boiler is desired for a building already erected, it can now be obtained.

#### 4—LOSSES OF HEAT

The heat loss in flues due to unburned gases may run as high as 50 to 75 per cent, while a loss of 30 to 40 per cent of the heat units generated is not uncommon. This loss will be reflected in the coal bill and is generally due to poor firing, low-grade coal, inefficient damper and draft regulators, or, in some cases, to poor boiler design. The only legitimate heat loss is that through the radiators themselves. Therefore the architect should see to it that there is as little loss as possible by piping (although some to warm the cellar is excusable), and that not too much escapes from the boiler itself. Proper insulation will reduce the piping loss, as well as that of the boiler. The designers of boilers strive to have as little exposed surface on the outside of the boiler as possible and all the exposed surface that is possible on the inside, so that every unit of heat generated may come in contact with a surface and be transferred to the water. The boiler should be so insulated that it will be possible to touch any of its sides with one's hand. However, this does not mean that the doors or gadgets attached to the boiler, such as pet cocks, etc., will be that cool.

#### 5—PROPER SIZE FOR BOILER

The great amount of heat lost from a building is not generally realized. The building itself gives off a great deal of heat. All one has to do to see this is to look down the side of a large building on a cold day. The heat waves can be seen shooting out from it for a distance of one to two feet. When the architect realizes this he will be more careful in selecting a boiler and give the proper amount of thought to its

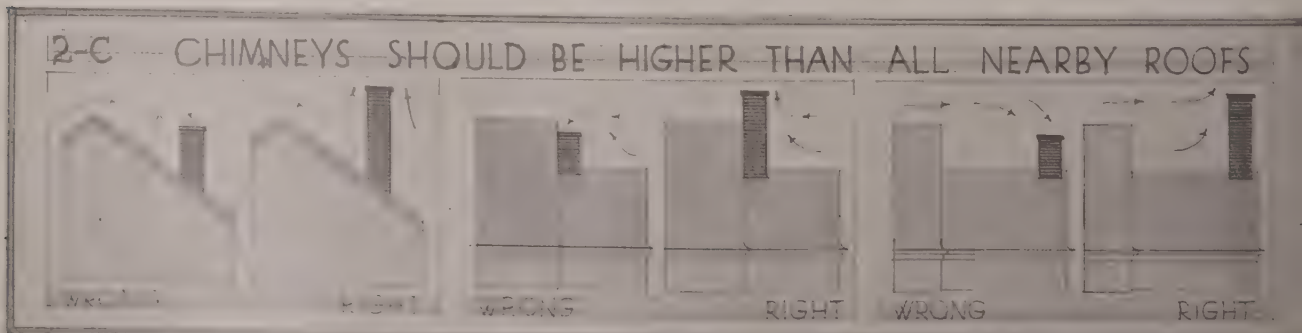


rating. It must be remembered that boilers are rated in many different ways, and not always on the same basis. Then, too, they are rated under ideal conditions. Nothing is deducted for the soot that is bound to accumulate. The surfaces are rated as if they were clean and not full of scale and dirt. It is presumed that there is an ideal draft and that the boiler is efficiently fired. Dirty or rusty water may make steaming more difficult. All these may be factors that will upset the architect's calculations, but nevertheless the client will blame only him if the heater does not deliver enough heat. Therefore the architect should always get a boiler that will do the duty to which it is assigned. As was previously mentioned, not all boilers are rated in the same way. To make sure that he is getting the proper amount of heating the architect is advised to consult a booklet put out by the Heating, Piping and Air Conditioning Contractors' National Association. This will give the real rating of the boiler, upon which he may depend. Then if the necessary radiation is accurately figured, the architect may rest assured that the building will be properly heated insofar as he can control the situation. A boiler is really a mechanism for converting the coal into heat and transferring the heat

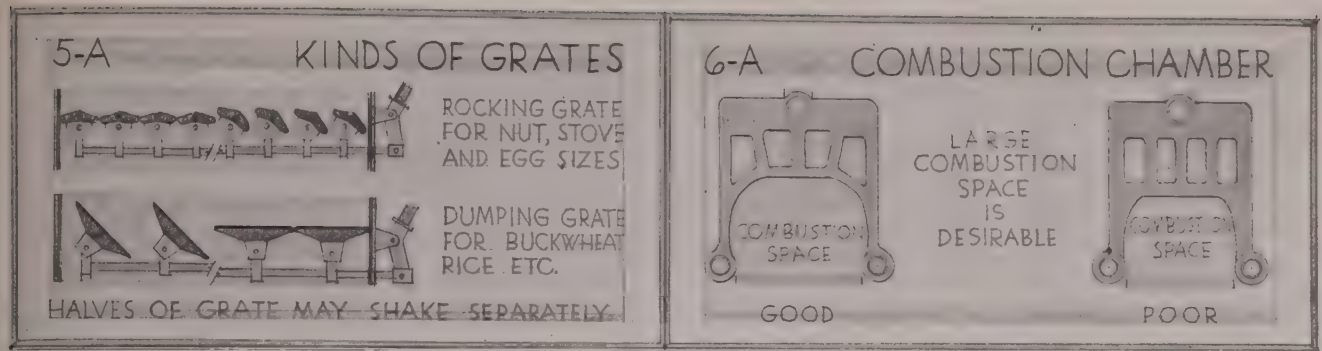
to the water. Too often the architect selects one too small in size to do the work properly.

The measure of the value of the performance of a boiler is the amount of the useful heat which is obtained from the coal used. The fuel used over a period of one year may cost much as the boiler, in some cases even more. Therefore it is evident that the real cost of the heating of a building is not the comparatively small amount spent for a boiler, but the price of the fuel. Hence 10 per cent more spent for a boiler of adequate size to economically convert the coal into heat is not an extravagance but eventually a saving. Objections to a heating system are generally traceable to one of the following causes: incorrect piping, not enough radiation, poor chimney, and small boiler. Heating systems too often suffer from being too small. Fuel costs are excessive because a small boiler is driven too hard in an effort to get enough steam from the grate for the radiation. The result is that coal is burned faster than it is possible for the water to absorb the heat units, and hence most of them go up the chimney and are wasted.

The grate of a boiler and its casing are important factors in the heating system. The grate should be rugged enough to withstand hard usage. Some boilers have their grates provided so that they may be shaken separately (Fig. 5A). This has an advantage in that one part of the fire may be allowed to lie dormant and the other part used to keep up the heat, as might be desirable in mild weather. It is better to keep sufficient air space under the grate so that they will be cool. The minimum distance between the bottom of the ash pit and the grates should be 18 inches, and it is preferable to have it 24 inches. Good quality grates wear out very slowly in the average boiler. Replacement becomes necessary only when they are burned out. The architect should







make sure that he specifies a large enough grate area. An oversized grate area allows a slower burning of gases and a consequently longer time for the heat units to be transferred to the water.

### 6—BOILER INTERIOR—TUBES AND SECTIONS

One of the first things the architect should look for in the boiler he would specify is whether or not it is easy to keep clean. If not, he can rest assured that the person who attends the boiler will not make an effort to keep the boiler clean from soot, and consequently it will lose much of its efficacy. Then it is important to see to what tests the boiler is subjected, so that he will be sure that it is going to stand up under severe demands. It is well to specify a boiler having a large combustion space so that the gases will have a place in which to burn and will not dissipate their heat in the chimney (Fig. 6A). A flat surface over the combustion chamber would not offer as much area for heat transference as a corrugated one, hence many manufacturers have taken advantage of this principle and have corrugations in the crown sheets of their boilers. These help in still another way. If the air were allowed to flow along without any interfer-

ence it would stratify, but because of these corrugations it is stirred up and more heat units are removed from it (Fig. 6B). The next thing for the architect to require is a long fire travel. The longer this is the more chance there is for the boilers to absorb the heat units from the gases (Fig. 6C). Also, the more tube and other interior surface area there is exposed, the less heat will go up the chimney. There must be space inside the boiler for the water to circulate. The more this is possible the more heat can be absorbed from the hot gases. In large plants it is often advantageous to put mechanical circulators on the boilers to increase their efficiency. The better boilers have a large steaming space, so that only dry steam is sent up through the pipes. To send wet steam through the lines only overloads them.

Steel boilers often have small tubes. This is permissible within limits, and is good practice if the architect makes sure that they are not so small that they will easily clog up and be difficult to keep clean (Fig. 6D). Also, the tubes will very often be long so that in the long travel more of the heat may be transferred to the tubes and thence to the water. However, it is important that the tubes be easily cleaned of soot or their efficiency will be radically reduced by its insulation.

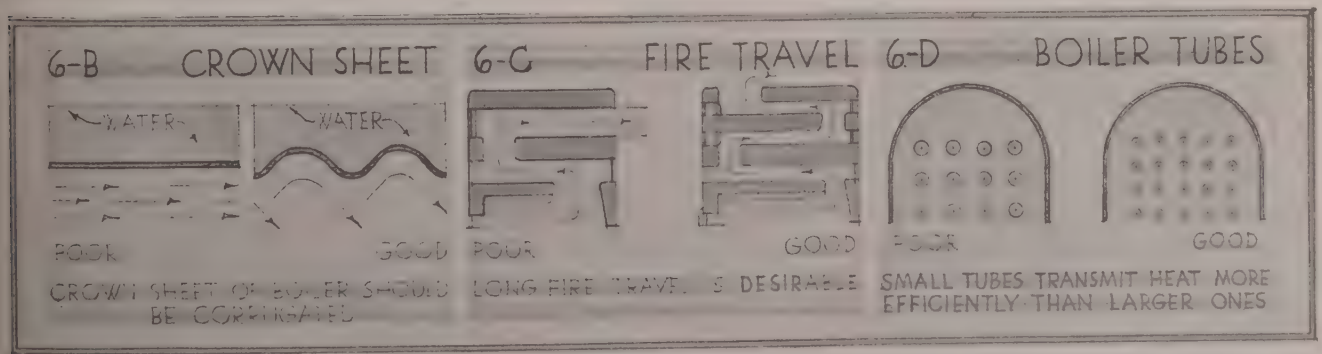
Some boilers come with especially

low water lines so that they may be installed in shallow cellars without the necessity of building pits for them.

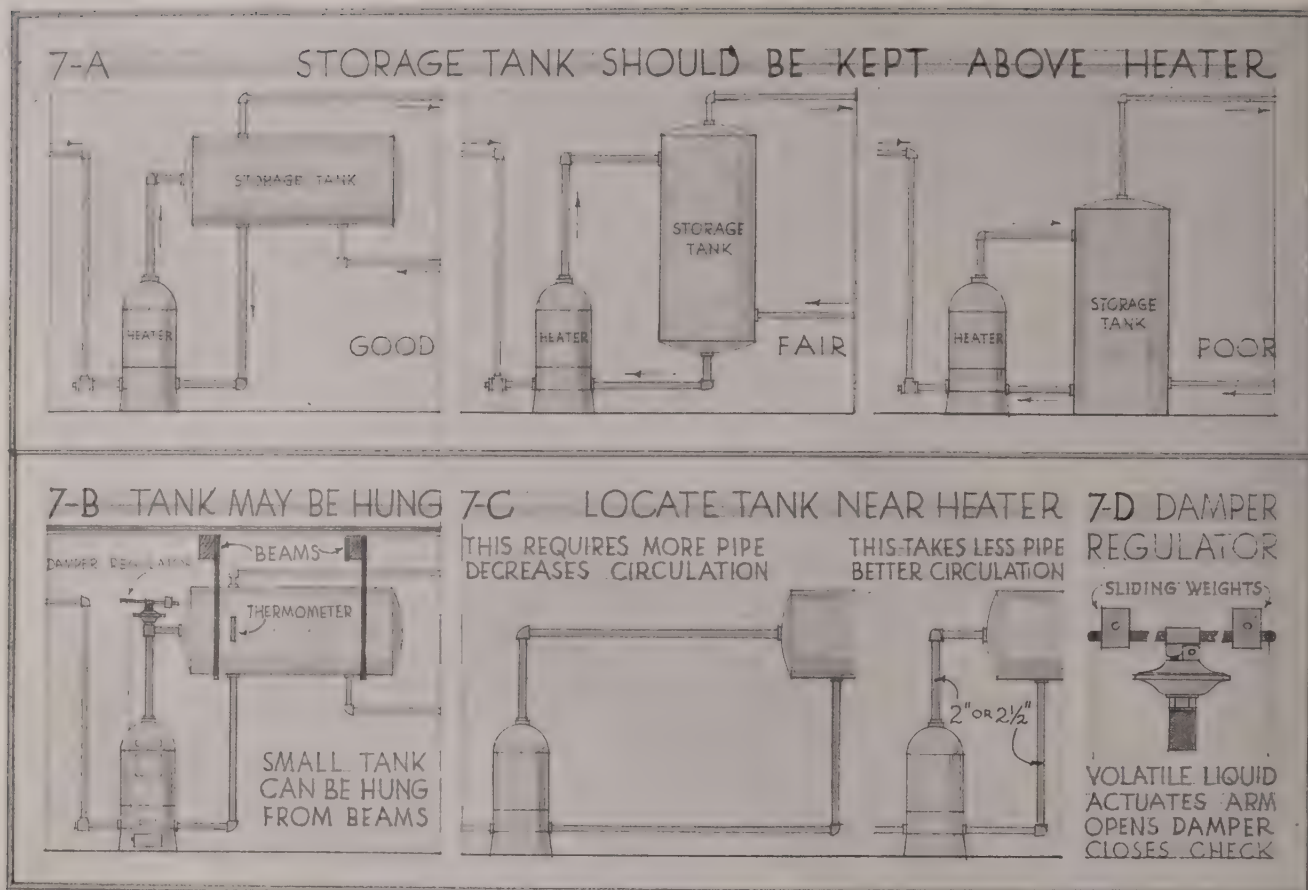
Water-tube boilers are generally not used where there is hard water, because of the difficulty of cleaning them.

### 7—DOMESTIC HOT WATER

All the general requirements that hold good for steam and hot-water heating boilers will also be true with several additions for boilers supplying domestic hot water. While steam boilers are generally tested for a hydrostatic pressure of 60 to 100 lbs., hot-water tank heaters must stand much higher pressures, due to the fact that the water is under pressure before it is heated. Therefore some tank heaters are tested for as high as 300 lbs. hydrostatic pressure, which of course adds to the ease of mind of the owner of such a heater. The architect should investigate the heater's rating. Most catalogues give the number of gallons the heater will heat. They often fail to mention the number of hours it takes to do this. In other words, a heater which is labelled 600 gallons may be on a six-hour basis, which means it is capable of heating 100 gallons of water 100 degrees per hour, or 600 gallons of water 100







degrees in six hours. Sometimes the tests are based on a different number of hours, and it is important to know this.

It is best practice to put the bottom of the tank above the top of the heater and in a horizontal position rather than in an upright one as is too often done (Fig. 7A). If it is a small tank for a one or two family house the tank may be hung to the beams in order to achieve this position (Fig. 7B). It is advisable to have the circulating lines between the heater and the tank as short as possible, as well as to have them the same size as the outlets on the heater or the tank (Fig. 7C). This makes for a freer flow of the water through these lines, and is the most efficient way to do the job, because it transfers the heat to the water most quickly. There should be a washout plug at the bottom of the heater so that it may be flushed out when necessary. It is well to have a relief valve on the system in order that the heater as well as the tank and the lines may be protected. This valve will discharge water when the pressure exceeds the amount for which the valve is set. The amount for which the valve is set depends upon

the water pressure and the pressure that the tank will stand. A line should lead from the relief valve back to a wall or other place where a discharge of hot water will not injure any one.



The tank question is an important one. In the smaller building it is desirable to have one that will not rust. These are now produced in several metals and are very satisfactory. In the larger buildings, however, the costs of such tanks would be too great at the present time, so either black iron ones or galvanized ones are used. Here the architect must be very careful in his selection. The tanks are divided into two classes, standard and extra heavy. The standard tank is tested



*Next month Mr. Bartels will deal with further elements of Better Practice in Heating*

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for 75 lbs., while the extra heavy is tested for 100 lbs. But the difference does not stop at that point. It must be realized that more rusting will take place in a black iron tank than in a galvanized one. Therefore the better tanks are made of thicker sheets either at the ends or throughout. However, unless there is a specific demand for these better tanks an inferior one may be foisted upon the architect. The heating contractor or the plumber can evade the demand for the better tank by proving that his tank will stand a pressure of 100 lbs., and although the better tanks are made of heavier plates, there is no definite standard that the architect can refer to as regards thickness.

A check valve on the hot-water return line is an important adjunct to prevent any interference in the circulation of the hot water. A thermometer on the hot-water tank gives the person operating the system something to go by other than a guess. A damper regulator that is operated by means of an apparatus put on the hot-water circulating line not only will result in coal saved but in a more uniform temperature being maintained (Fig. 7D).

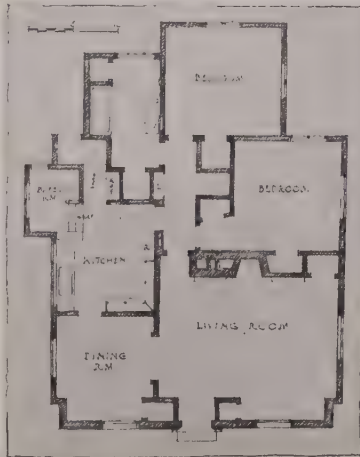


# Some Recent Houses by Herman Brookman



The front of the house is of twelve-inch salmon-colored brick. Above the windows the decorated panels are of brick set with the corners projecting.

Below, a detail of a front corner, from which it will be seen that the side walls are of shakes with a window course of cedar and horizontal battens



The floor plan is of the compact one-story type so widely used on the West Coast

jecting. On the shutters the herringbone strips are of a light apple green on the same silver gray as the roof. Sash is green

In the living-room the architect has emphasized the fireplace with brick of two colors, the horizontal lines contrasting with the vertical battens of the woodwork around the room



HOUSE  
FOR  
TOM GREENE, JR.  
PORTLAND,  
OREGON

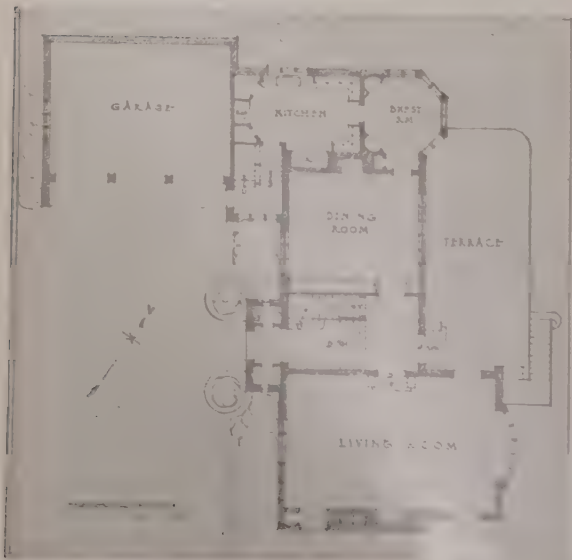
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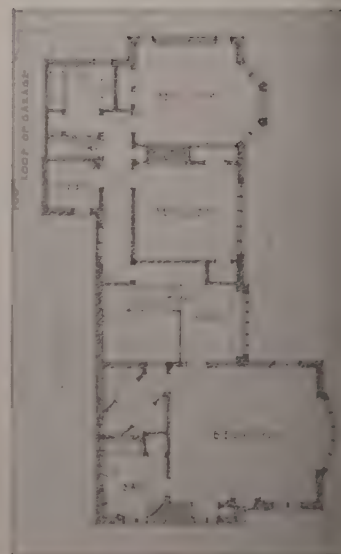


*Portland's unusual topography explains the hillside house with its view to the east over the city, the river, and the snow-capped peaks of the Cascades. Every important room in the house has this eastern exposure. Brick is salmon-color, roof of hand-split cedar shakes stained silver gray. The bay and woodwork trim is cedar siding stained like the roof. The entrance motive is trimmed with cast stone*



*At left, first-floor plan. It will be noticed that one enters upon a landing midway between first and second floors*

*At right, plan of second floor. There is in the basement a large playroom with fireplace, two maids' rooms and a bath, laundry, and boiler room*



HOUSE FOR LEE S. ELLIOT  
PORTLAND, OREGON  
HERMAN BROOKMAN, ARCHITECT

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*The west front, to which the entrance drive dips. The garage is at left, and there is an adequate court space for turn-around*

*In the hall near the main entrance door*

*A corner of the hexagonal breakfast room. Half of its wall surface consists of windows commanding the view*



*The stair rail is of wrought iron*

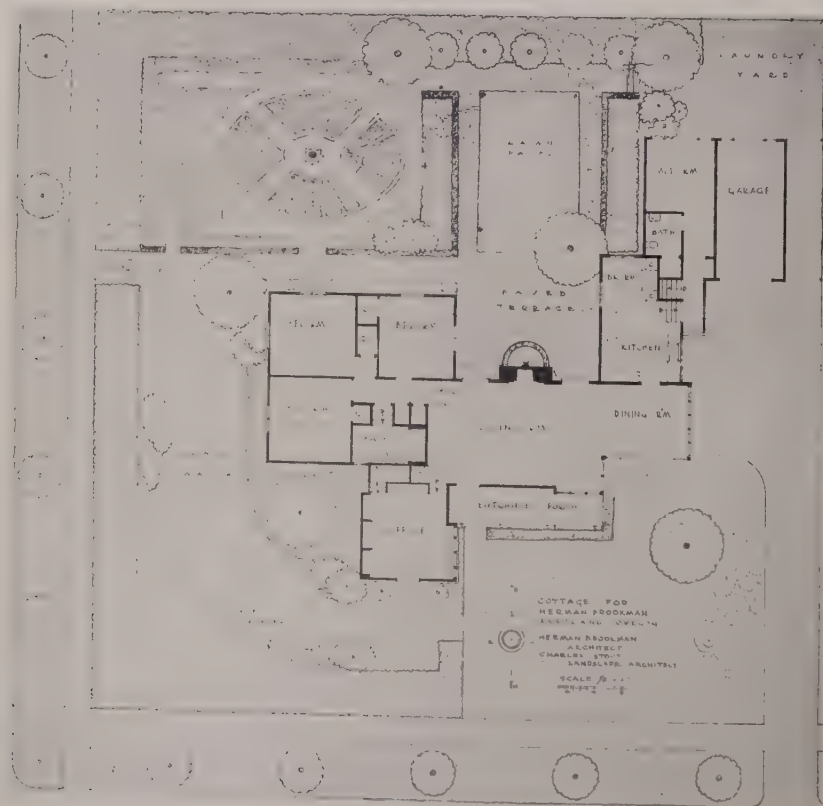
*A glimpse of the dining-room from the hall. Here the wood-work is of La Juan mahogany finished in its natural color*







*Mr. Brookman's own house is built largely of wood, but has a base course of brick. Siding and brick are painted white, excepting the window course, which has a gray-pink cast. The doors are of this same color. Silver gray cedar shingles are used for the roof*



*The plan shows an ingenious combination of living quarters and office, the latter at a level three steps below the living-room and opening upon what is in effect a garden of its own*

HOUSE OF  
HERMAN  
BROOKMAN  
ARCHITECT  
PORTLAND, OREGON

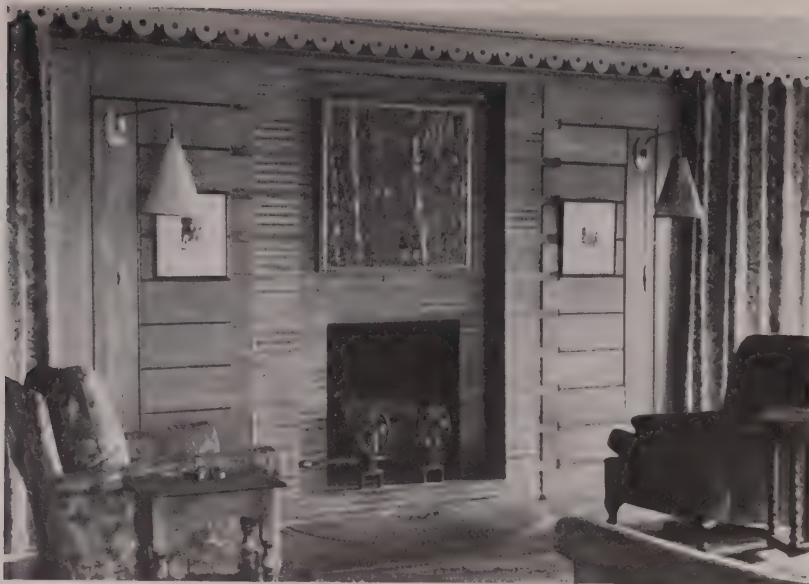




*A corner of the living-room, showing the stairway leading down to the bedrooms*

*The dining-room is an extension of the living-room, as may be seen from the plan, with a continuous band of windows on two sides*

*Below, entrance to the office. The decorative pediment is of carved wood painted white. The door has the same gray-pink color as the window course*



*The fireplace side of the living-room, with an unusual combination of brick and woodwork keyed together. Portieres cover the doors leading out upon the terrace*



*Below, a glimpse of the house from the upper slope to the southeast*







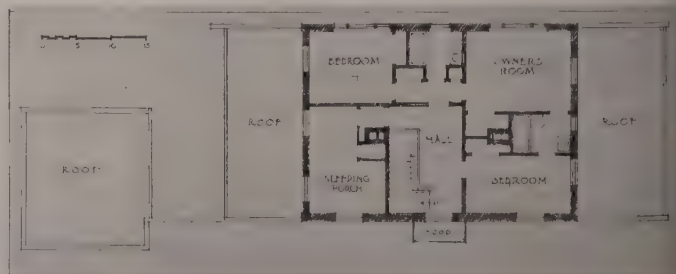
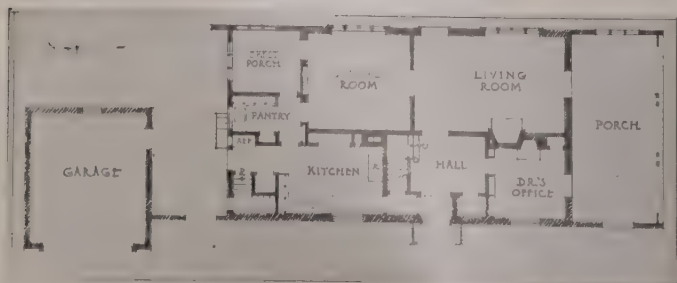
*A common red brick has been used for the walls of the Palmer house. The roof is of cedar shingles stained silver gray. All of the trim is white, and the shutters a light blue-green*



*Main entrance. The delicacy of scale in the trellis and supports is due to the fact that the material is wrought iron, painted white*

HOUSE FOR  
DR. DORWIN L. PALMER  
PORTLAND,  
OREGON  
HERMAN BROOKMAN,  
ARCHITECT

*There is a workable combination of house and doctor's office here, with the possibility of entering the doctor's office either through the porch, or, if that is occupied, through the main entrance*







*Another hillside house with the entrance front on the upper side. The combination of stucco, carved wood lintel, and wrought iron lighting fixture is an interesting one*

*The McHolland house is of stucco on masonry. Trim and stucco are a cream color, with shutters of blue-green, and silver-gray cedar shingle roof*



HOUSE OF V. H. JORGENSEN, PORTLAND, OREGON

HERMAN BROOKMAN, ARCHITECT

HOUSE OF J. McHOLLAND, PORTLAND, OREGON



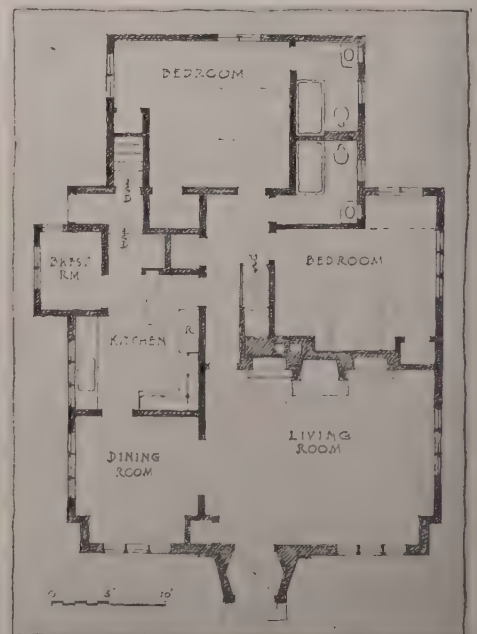




*There is a similarity of plan in the house shown on this page and the Green house on page 273. Each of these cost \$4,500 a little over two years ago. Here again the architect has emphasized in color and material a horizontal course for the windows. Considering the size of the house with its two bedrooms, the supply of bathrooms is unusual*



HOUSE OF  
MRS. EMMA STEIN  
PORTLAND, OREGON  
HERMAN BROOKMAN,  
ARCHITECT





*Saturday, September 1.*—Talbot F. Hamlin, who is librarian of the Avery Library of Columbia University, has some interesting ideas as to what an architectural library of today should be. In the first place, since the Avery Library is an American library, it should be particularly strong in material devoted to the architecture of this region. But the library must also be a place where the architectural student can find a record of the great achievements of architecture and the allied arts of both past and present. Additions to the shelves cannot be made on the basis of any dogmatic theory of style desirability or any personal prejudices. By far the greatest number of recent acquisitions are books concerning directly or indirectly the so-called modern movement in architecture and the allied arts.

*Monday, September 3.*—The Portland Cement Association deserves the commendation of the profession as a whole. Unlike some of the other trade associations which have been none too careful in activities that trespass upon the architect's field of action, the Portland Cement Association has adopted the policy of answering the technical questions of prospective builders by putting them in touch with architects. It has steadfastly refused to enter upon any program of stock plan selling. Our hats are off to you, Sirs!

*Wednesday, September 5.*—The problem of extending architectural services to include the small house—the great bulk of building in this country—continues to receive an increasing amount of thought and study. Wilbur R. Hanawalt, of Cleveland, has a program which is worthy of notice. "Any effort at the solution of the small-house problem must be two-fold: It must reach the public in terms that the public can understand; and it must place the public's needs before the profession. . . . The needs are mainly two: Making possible the handling of the smaller contract by architects and decorators on a profitable basis; and getting authoritative and unbiased information into the hands of the small home builder when he needs it. . . . The A. I. A. should invite the co-operation of organized interior decorators and landscape architects in forming a national home information council. This council would carry on a continuous program to integrate the work of present and added sources in information for the public. . . . It would direct the appropriate agencies where unbiased information could be secured. . . . The prospective home builder's needs and desires would be summarized and codified, then referred to a committee of the professional group. This committee would determine whether members of the professions would care to handle the case, and if so, refer it to a member on some rotating basis. . . . If, on the



## The Editor's Diary

other hand, the job was too small for professional handling, it would be returned to the information centre for execution through the use of student architects, decorators, and landscape men, being finally approved by the professional board before execution. . . . Thus the public could benefit by trained skill; students would profit by actual experience in small house work with professional supervision while earning some small remuneration."

The chief difficulty on the face of this scheme is the elaboration of organization required, though this organization might be achieved gradually and improved as experience dictated.

*Thursday, September 6.*—After months of jockeying for position the New York Housing Authority and the Public Works Administration in Washington seem at the moment to have reached an understanding. At least Mr. Ickes has announced that he is ready to go ahead on a basis which he outlines in detail. The PWA is to buy the land, to give the Housing Authority a 30 per cent grant and a loan, the city's equity being mainly in the form of public services and in land gained by the closing of certain streets that would no longer be necessary. The project is to be amortized in a longer period than usual, forty-five years, and is to be supervised jointly by the Housing Authority and the Federal PWA. It should seem that some such logical arrangement as this might have been arrived at months ago.

*Saturday, September 8.*—While the contributors to the Guest Editor's section in the last issue took a stand almost unanimously against competitions, nevertheless, I hear more and more enthusiasm for certain kinds of competitions as being well adapted to present needs. For instance, the design of state and city works if handed over to an architect or a group on the basis of someone's judgment alone is almost sure to provoke criticism. A properly conducted competition for such work gives the small men a chance to prove their worth and, in these days, is no great hardship in requiring the duplication of

effort—since if the competitors are not doing that they are probably reading the newspapers. Lorimer Rich makes the assertion that every one of the satisfactory public buildings in New York was designed as a result of a competition; moreover, that those which were not the result of competitions are less notable architecturally. Herbert G. Wenzell, in *The Weekly Bulletin*, of the Michigan Society of Architects, makes the point that Raymond Hood's career illustrates the value of competitions. Without such means of attaining recognition Hood might still have been unknown at his death. That, of course, is a very debatable question, for Hood's power grew apace in the last twelve years, and might very easily have done so even without his spectacular leap into fame with the Tribune Tower competition.

*Monday, September 10.*—It is a matter of serious concern to us that we have no really adequate means of gathering promptly the news of architects throughout the United States. We did not know until long after his death, on August 23, that Charles Kotting, of the old well-known firm of Chittenden & Kotting, had passed on. We do read a number of newspapers from all over the country, but by no means all of the important ones. I wish there were some way in which organizations in the profession or individual members of the profession could be induced to keep us informed about important events in their respective communities.

*Tuesday, September 11.*—Tonight Sigmund Spaeth is giving a dinner to nearly two hundred men and women interested in the possibilities of a new form of art expression adapted to the radio. On my left as I take my seat at the table is Miss Elstner, one of the cast of "The Gibson Family"; on my right, Mrs. Courtney Ryley Cooper, whose husband has written the book for this new musical comedy, designed particularly for broadcasting. The prospect of a pleasant evening between two such interesting table neighbors has suddenly lost its significance, for on my left-hand neighbor's left is Lawrence Tibbet—so I shall see no more of her. Turning to my right, on the far side of Mrs. Cooper, Rudy Vallee has just taken his seat. The prospect, therefore, would indicate that I had better busy myself with writing diary.

*Thursday, September 13.*—James H. Blauvelt tells me that Mrs. Edward Palmer York, widow of the late partner in the firm of York & Sawyer, has joined him in the practice of interior decoration.

*Friday, September 14.*—Commissioner Robert Moses, John H. Finley, and I. N. Phelps Stokes rededicated Bryant Park in the rear of the New York Public Li-



brary today. This two-thirds of a city block has passed through a picturesque life in which it finally came to be one of the most disreputable parks in the city of New York. Robert Moses, with the aid of the unemployed, has ended this, and has produced a magnificent open space as a setting for the William Cullen Bryant bronze. The scheme is one developed by the Park Department from Lushy Simpson's winning design in a competition held in the fall of 1933 by the Architects' Emergency Committee. Here is a great central plot of lawn surrounded by a double border of trees, with a memorial fountain to Mrs. Josephine Shaw Lowell near the west end. A memorial to Robert Shaw, Mrs. Lowell's brother, stands at the head of the Boston Common. The thing I liked most about the new park is that it has a central open greensward which, incidentally, is likely to be kept so in spite of city dust and midsummer droughts, for it has an underground sprinkling system.

*Saturday, September 15.*—Mrs. Simkhovitch, who is president of the National Public Housing Conference and vice-chairman of the New York City Housing Authority, has come back from England deeply impressed by the progress that is being made in housing throughout England. England's present attitude toward housing as a public duty is reflected in an address by the Earl of Listowel before the House of Lords:

"The basis for the uneconomic housing of the poorest paid section of the working class . . . is founded on the belief that individuals have the same right to decent homes and decent housing accommodations as they have to a minimum of education or to the protection of the law. . . . Private enterprise has been unable to furnish these houses at a low rent for the working class [and now] the State and local authorities have to step in and do what the business man has been unable to perform."

*Monday, September 17.*—The Engineering Foundation believes there is considerable more activity of late in the study of building foundations than in all history before our time. Foundation planning is still primarily a matter of judgment. Nevertheless, we are rapidly learning something about soil mechanics and the widely differing conditions that may be found even in local foundations. In designing a column footing ten feet square, the engineer used to assume that the pressure on the soil under each square foot of the footing will be, say, two tons. Actually this is not the case, the pressure on the soil being greatest at the centre and least at the edges. Many engineers and research bodies are adding to our knowledge concerning the mysteries of underground supports.

*Tuesday, September 18.*—Lunched with Philip Giddens, recently back from

Spain with a portfolio full of beautiful drawings. Some of these we are to have the pleasure of reproducing in an early issue. Like most of his fellow etchers, Mr. Giddens reports that the dealers are selling comparatively few etchings these days.

*Wednesday, September 19.*—There is a significant straw in the wind perhaps, in the fact that this morning's *Times* tells of two more Manhattan loft buildings, one of four stories and one of five, which are being cut down to two stories each. There is a superabundance of loft space in New York, but ground floor space, being limited by the size of the island, is in better demand.

*Thursday, September 20.*—R. A. Fisher, Assistant Professor of Architecture at Carnegie Tech., showed me the work that unemployed architects and draftsmen of Pittsburgh have been doing this summer in low-cost housing research. About nineteen of these men were employed for a period of about sixteen weeks studying the possibilities both in city housing and in subsistence housing, working out details of engineering, heating, and the like. The results of this work, under Professor Fisher's direction, consisted of a large number of uniformly rendered drawings together with working drawings of the structural and mechanical details—a particularly interesting showing, embodying many fresh ideas in the technician's work. With the main emphasis having been placed upon the social and economical phases in our general study of housing by various bodies and individuals during the past two years, this examination of some possibilities from the technician's viewpoint is particularly constructive.



*Friday, September 21.*—Motored up across Connecticut and Massachusetts into New Hampshire and Vermont, following the Connecticut Valley toward the river's source. There ought to be a custom established providing for an annual visit into this northern country when the foliage is assuming its autumnal dress. It is just as important for the eyes to be rested and benefited by the tapestry of these northeastern hillsides as it is to benefit the body by annual visits to the baths of Baden Baden, or to Vichy or Saratoga Springs for the waters.

*Sunday, September 23.*—Motored through the tight little valley sheltering Plymouth and the Coolidge homestead, and, in contrast to this primitive simplicity, had a look at the Orozco murals in the Baker Library of Dartmouth at Hanover. The murals are even worse than I had judged them from the photo-

graphic reproductions. Once again it was impressed upon me that the place for Mexican painters, if any, is in Mexico.

*Monday, September 24.*—Visited the memorial to Augustus Saint-Gaudens at Cornish. His home, which was an old inn remodeled, together with a lovely garden and the studios he has added, are maintained by trustees as a memorial to the man and his work. In the larger studio are to be found the full-size plaster model of the Chicago "Lincoln," and smaller models of the Adams memorial in Washington, Robert Shaw at the head of the Boston Common, the Diana that once perched on top of the Madison Square Tower, the Stevenson bas-reliefs, and many other reminders of the wealth of beauty in form that Saint-Gaudens left us.

*Wednesday, September 26.*—Having motored down the Connecticut Valley yesterday, I spent the night with Lewis Welsh in his two-hundred-year-old farmhouse at Fairfield, then to see and photograph the new house which Louis Rosenberg, architect and etcher, has built for himself in Greens Farms. Rosenberg, like most of those who have freed themselves from the fetters of literal style copying, is frequently amused by the bewilderment of visitors who refuse to believe that no style label can be attached to his house. It is reminiscent of work in England, France, and in the country of his own forefathers, Sweden, the whole welded into an unusually charming environment for life today.

*Friday, September 28.*—Frederick Woodbridge, Jr., was telling me at luncheon today of the reconstruction of Columbia University's School of Architecture. While the problem method as developed by the Ecole is being retained as the basic principle of instruction, group competitions are eliminated. Dean Hudnut feels that the competitive system has developed so many conventions and so many arbitrary standards of judgment as to have become widely separated from reality. There are to be three studios in the School of Architecture, for the work of design. Each of these will be under a master and an assistant. The three masters are Jan Ruhtenberg, the Swedish architect, Dean Hudnut, and Russell M. Krob. In the evening studios for special students, Henry S. Churchill and Frederick Woodbridge, Jr., will be the masters. The student will set his own problem, and will work it out in considerably further degree than in the past, under the master's direction. It is possible in this way for a student to specialize much more easily in the particular field which interests him—whether it be decoration or large-scale housing or individual residential work. It will be the master's province to guide him in setting up the problem and in solving it in line with regular office practice.

## « ARCHITECTURE »

NOVEMBER, 1934





*In a typical slum section of Atlanta, Ga., demolition has been started in preparation for the erection of a housing project under the Federal Emergency Administration of Public Works. The allocation of public funds is \$2,100,000. The plot of seventeen and one-half acres, that cost the government 39 cents per square foot, is near three institutions for the higher education of Negroes, and the housing is exclusively for that race.*

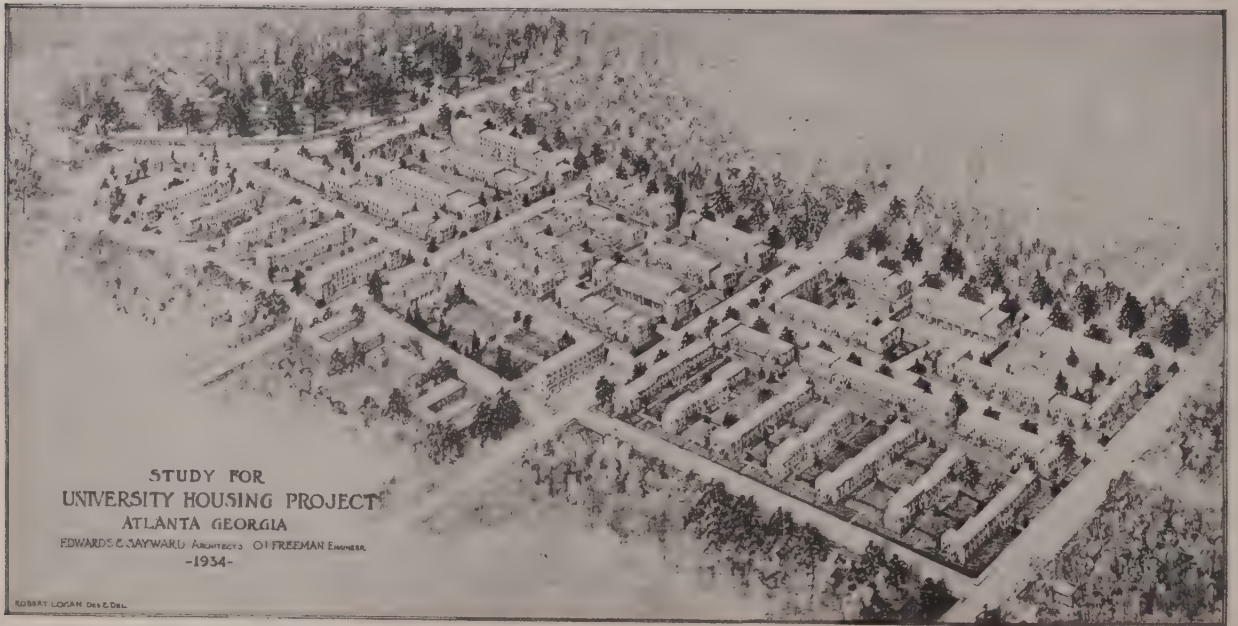
*Building coverage, 26 per cent. There are to be forty-two groups of two- and three-story family housing units, containing approximately 2450 rooms. The apartments are of four types, ranging from two to five rooms. There is to be a building for stores and offices. The plan calls for no back yards, and no common halls, entrances being on both sides of the buildings. Construction provides fire-proof, reinforced concrete floors. Walls are faced with cinder blocks (painted) and brick, backed up with load-bearing tile. Roofs are of tar and gravel, insulated. Heating and cooking by gas. A plot plan appears overleaf, and the character of the work is shown by the accompanying photographs of models*

EDWARDS & SAYWARD, ARCHITECTS

## University Housing Project, Atlanta, Ga.

« ARCHITECTURE »  
NOVEMBER, 1934





THE NINETY-SEVENTH IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS  
ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

# ARCHITECTURE'S PORTFOLIO OF ROOF TRUSSES

*Subjects of previous portfolios are listed below  
at left and right of page*



*Below are the subjects of  
forthcoming Portfolios*

Modern Lighting Fixtures  
DECEMBER

Circular Gothic Windows  
JANUARY

Tile Roofs  
FEBRUARY

Molded Brick  
MARCH

Dormer Windows  
APRIL

Entrance Seats  
MAY

*Photographs showing interesting  
examples under any of these head-  
ings will be welcomed by the Edi-  
tor, though it should be noted that  
these respective issues are made up  
about six weeks in advance of  
publication date.*

❖1926  
DORMER WINDOWS  
SHUTTERS AND BLINDS

❖1927  
ENGLISH PANELLING  
GEORGIAN STAIRWAYS  
STONE MASONRY TEXTURES  
ENGLISH CHIMNEYS  
FANLIGHTS AND OVERDOORS  
TEXTURES OF BRICKWORK  
IRON RAILINGS  
DOOR HARDWARE  
PALLADIAN MOTIVES  
GABLE ENDS  
COLONIAL TOP-RAILINGS  
CIRCULAR AND OVAL WINDOWS

❖1928  
BUILT-IN BOOKCASES  
CHIMNEY TOPS  
DOOR HOODS  
BAY WINDOWS  
CUPOLAS  
GARDEN GATES  
STAIR ENDS  
BALCONIES  
GARDEN WALLS  
ARCADES  
PLASTER CEILINGS  
CORNICES OF WOOD

❖1929  
DOORWAY LIGHTING  
ENGLISH FIREPLACES  
GATE-POST TOPS  
GARDEN STEPS  
RAIN LEADER HEADS  
GARDEN POOLS  
QUOINS  
INTERIOR PAVING  
BELT COURSES  
KEYSTONES  
AIDS TO FENESTRATION  
BALUSTRADES

❖1930  
SPANDRELS  
CHANCEL FURNITURE  
BUSINESS BUILDING ENTRANCES  
GARDEN SHELTERS  
ELEVATOR DOORS  
ENTRANCE PORCHES  
PATIOS  
TREILLAGE  
FLAGPOLE HOLDERS

1930❖  
CASEMENT WINDOWS  
FENCES OF WOOD  
GOTHIC DOORWAYS

1931❖  
BANKING-ROOM CHECK DESKS  
SECOND-STORY PORCHES  
TOWER CLOCKS  
ALTARS  
GARAGE DOORS  
MAIL-CHUTE BOXES  
WEATHER-VANES  
BANK ENTRANCES  
URNS  
WINDOW GRILLES  
CHINA CUPBOARDS  
PARAPETS

1932❖  
RADIATOR ENCLOSURES  
INTERIOR CLOCKS  
OUTSIDE STAIRWAYS  
LEADED GLASS MEDALLIONS  
EXTERIOR DOORS OF WOOD  
METAL FENCES  
HANGING SIGNS  
WOOD CEILINGS  
MARQUISES  
WALL SHEATHING  
FRENCH STONEMWORK  
OVER-MANTEL TREATMENTS

1933❖  
BANK SCREENS  
INTERIOR DOORS  
METAL STAIR RAILINGS  
VERANDAS  
THE EAGLE IN SCULPTURE  
EAVES RETURNS ON MASONRY  
GABLES  
EXTERIOR LETTERING  
ENTRANCE DRIVEWAYS  
CORBELS  
PEW ENDS  
GOTHIC NICHES  
CURTAIN TREATMENT AT  
WINDOWS

1934❖  
EXTERIOR PLASTERWORK  
CHURCH DOORS  
FOUNTAINS  
MODERN ORNAMENT  
RUSTICATION  
ORGAN CASES  
GARDEN FURNITURE  
WINDOW HEADS, EXTERIOR  
SPIRES  
BUSINESS BUILDING LOBBIES





*Church of SS. Simon and Jude, Bethlehem, Pa.  
Henry D. Dagit & Sons*



*University of Chicago Dining-hall,  
Chicago, Ill.  
Zantzinger, Borie & Medary*

*Graduate College Extension,  
Princeton University, Princeton, N. J.  
Cram & Ferguson*



*Larchmont Avenue  
Presbyterian  
Church,  
Larchmont, N. Y.  
Office of  
John Russell Pope*



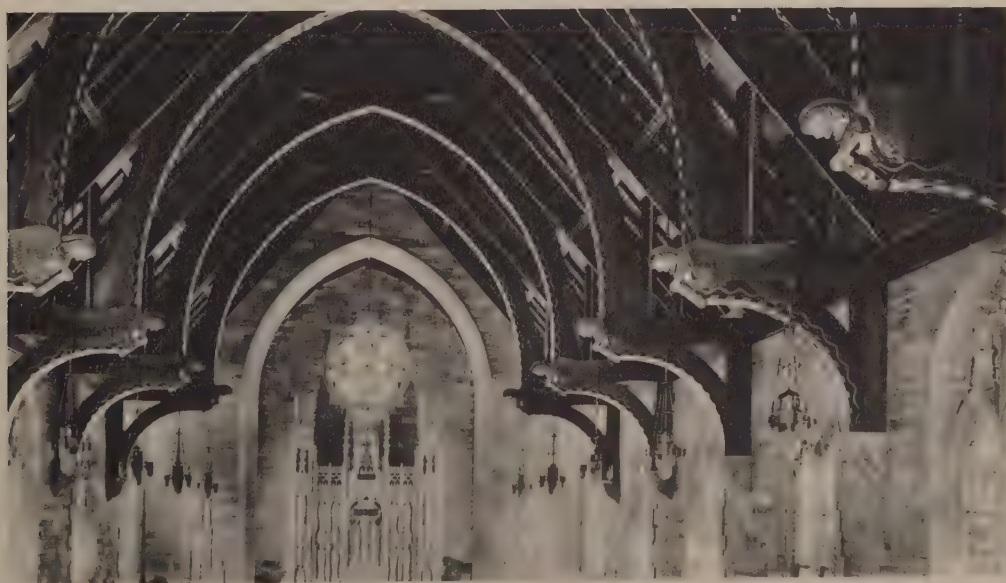


*Fourth Presbyterian Church,  
Chicago, Ill.  
Cram, Goodhue & Ferguson;  
Howard Shaw*

*Christ Church, Bronxville, N. Y.  
Mayers, Murray & Phillip*



*Jefferson Avenue Presbyterian Church, Detroit, Mich.  
Smith, Hinchman & Grylls*



*Holy Cross Church,  
Germantown, Pa.  
Henry D. Dagitt  
& Sons*





*Chapel, St. Thomas's Boys High School, Rockford, Ill.  
W. J. Van der Meer*



*St. Luke's Evangelical Lutheran Church,  
Chicago, Ill.*

*Public Library, Riverside, Ill.  
Conner & O'Conner*

*St. Paul's Church, Malden, Mass.  
Cram & Ferguson*





*House of Schofield Andrews, North East Harbor, Me.  
Tilden, Register & Pepper*



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*House of Hampton Anderson, Bedford Hills, N. Y.  
Harold Pindar Zoller*

*Grace Lutheran Church, La Grange, Ill.  
Culver & Eden*

*First Presbyterian Church, Wilmington, N. C.  
Hobart Upjohn*

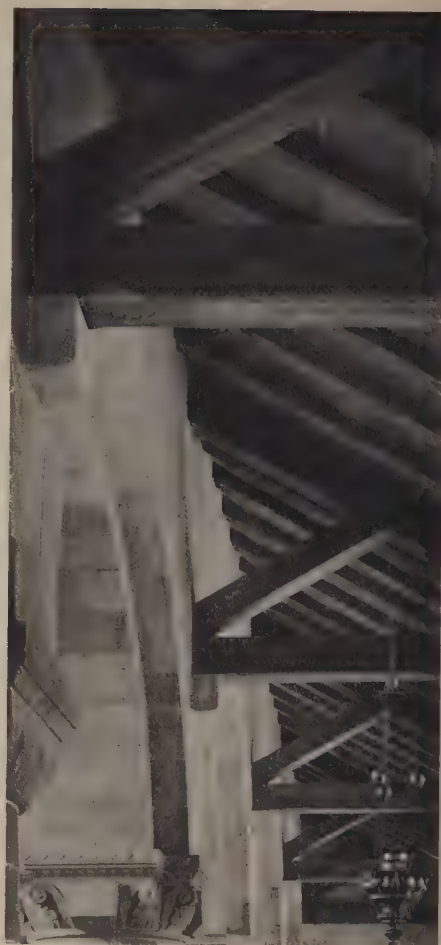






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*Church of St. William the Abbot, Seaford, Long Island*  
James W. O'Connor



*Kent School Chapel, Kent, Conn.*  
Roger H. Bullard;  
Arthur Loomis Harmon

*Camp Aladdin, Andover, N. J.*  
Clarence S. Stein



*Swimming-pool,  
Lido Beach Hotel,  
Long Beach, N. Y.*  
W. A. Sawsey



*Kent School Chapel, Kent, Conn.  
Roger H. Bullard;  
Arthur Loomis Harmon*

*House of J. H. Perkins,  
Greenwich, Conn.  
William F. Dominick*



*Epworth Euclid Church, Cleveland, Ohio  
Bertram G. Goodhue; B. G. Goodhue Associates; Walker & Weeks*



*Hudson Guild Farm,  
Andover, N. J.  
Clarence S. Stein*





*Church of New Jerusalem, Pittsburgh, Pa.  
Harold T. Carswell*



*Albany Park Lutheran Church, Chicago, Ill.  
Robert C. Ostergren*

*Christ Church Parish House, Fitchburg, Mass.  
Hobart Upjohn*

*Trinity Protestant Episcopal Church,  
Moorestown, N. J.  
Walter T. Karcher & Livingston Smith*





*Mission Covenant Church of Austin, Chicago, Ill.*  
J. E. O. Pridmore



*St. Peter's Church, Antioch, Ill.*  
Leo Strelka

*Chinese Y. W. C. A., San Francisco, Calif.*  
Julia Morgan



*Church of the Epiphany, Brooklyn, N. Y.*  
Latenser, Bastow & Way







*Trinity Lutheran Church, Detroit, Mich.  
W. E. N. Hunter Company*

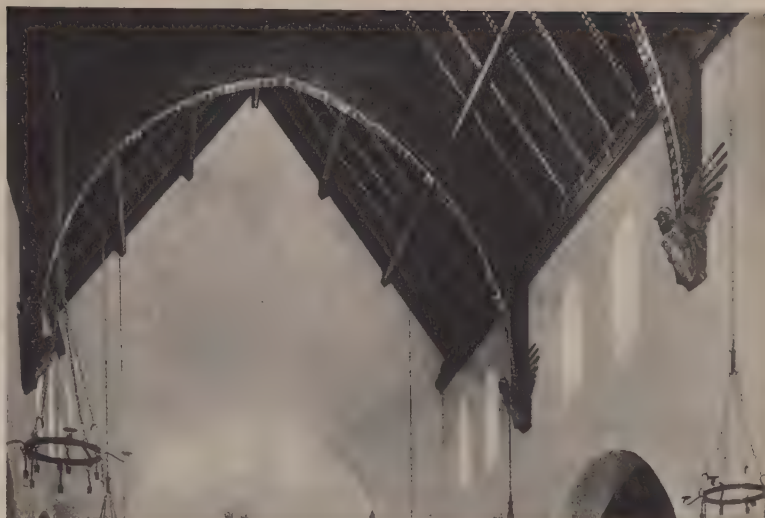


*St. Clement's Church, Lakewood, Ohio  
William Koehl*

*Chapel of the Intercession,  
New York City  
Bertram G. Goodhue;  
Cram, Goodhue & Ferguson*



*Hotel Rolyat,  
St. Petersburg, Fla.  
Kiehnel & Elliott*



*St. Brigid's Church, Westbury, Long Island*  
F. Burrall Hoffman

*Church of St. John the Evangelist,  
Buffalo, N. Y.*  
Karl G. Schmill

*Chapel, St. Lawrence University,  
Canton, N. Y.*  
Mayers, Murray & Phillip



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*House of  
Jefferson Penn,  
Reidsville, N. C.*  
Harry Creighton  
Ingalls

© Amemya







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*Refectory, Princeton Graduate College, Princeton, N. J.  
Cram & Ferguson*

*Irving Presbyterian Church, Indianapolis, Ind.  
Harrison & Turnock*



*Bethany Evangelical Lutheran Church, Chicago, Ill.  
Benjamin Franklin Olson*

*Collegiate Chapel of St. Andrew's, Philadelphia, Pa.  
Zantlinger, Borie & Medary*





*First M. E. Church, Hanover, Pa.  
Sundt & Wenner*

*South Madison Dining-hall,  
Princeton University, Princeton, N. J.  
Day & Klauder*

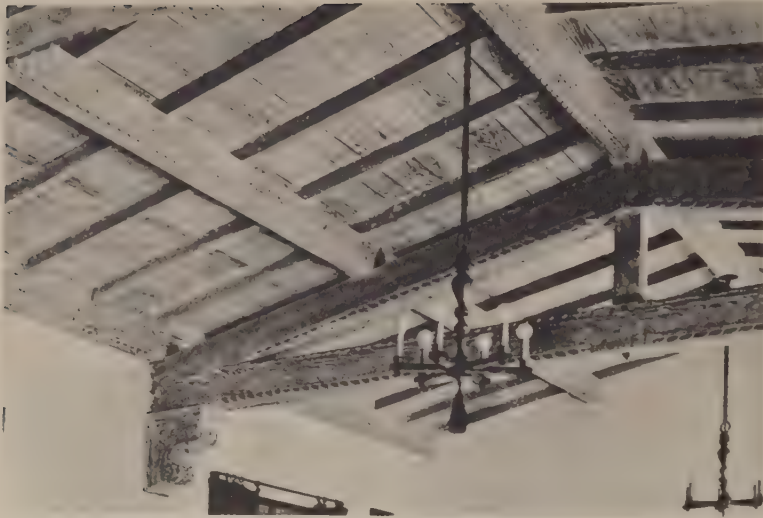


*St. John's Episcopal Church, Buffalo, N. Y.  
Mayers, Murray & Phillip*

*St. Paul's Episcopal Church, Yonkers, N. Y.  
Cram & Ferguson*







*Scripps College, Claremont, Calif.  
Gordon B. Kaufmann*



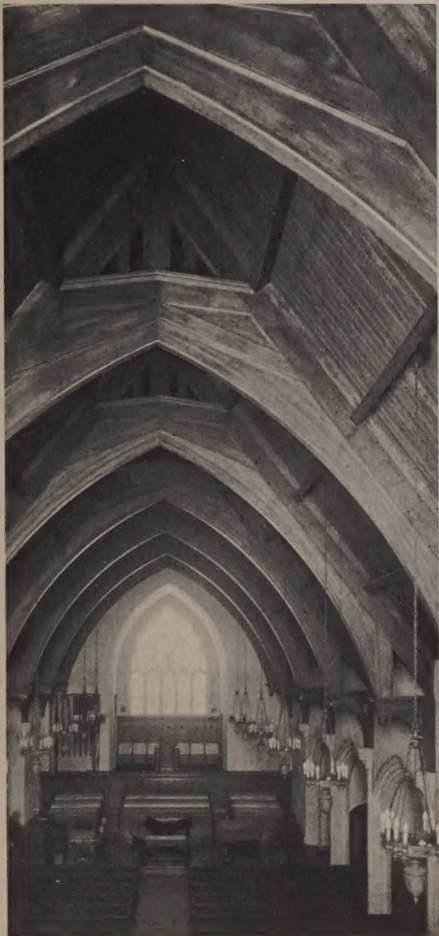
*First Presbyterian Church,  
Greensboro, N. C.  
Hobart Upjohn; Harry Borton*

*House of Henry de Roulet,  
Los Angeles, Calif.  
Morgan, Walls & Clements*



*Living-room in a  
California House  
John Byers*

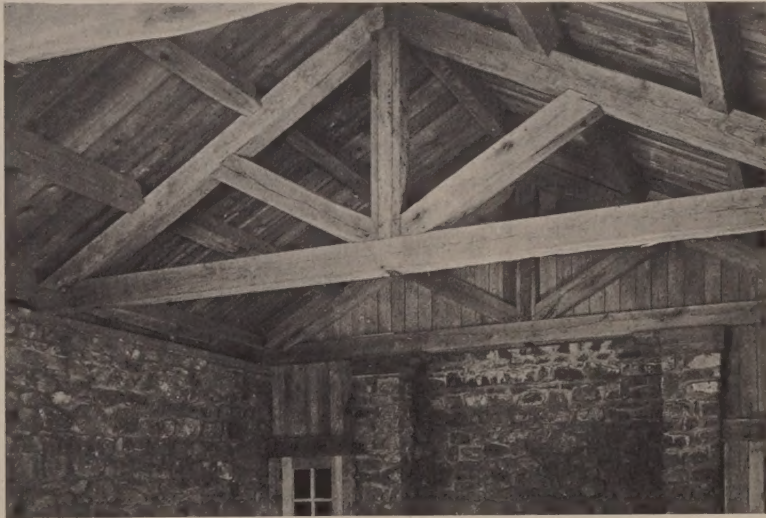




*Church of Latter Day Saints,  
Chicago, Ill.  
H. B. Bernard*



*St. James Evangelical Parish Hall, Chicago, Ill.  
Benjamin Franklin Olson*



*Hudson Guild Farm, Andover, N. J.  
Clarence S. Stein*

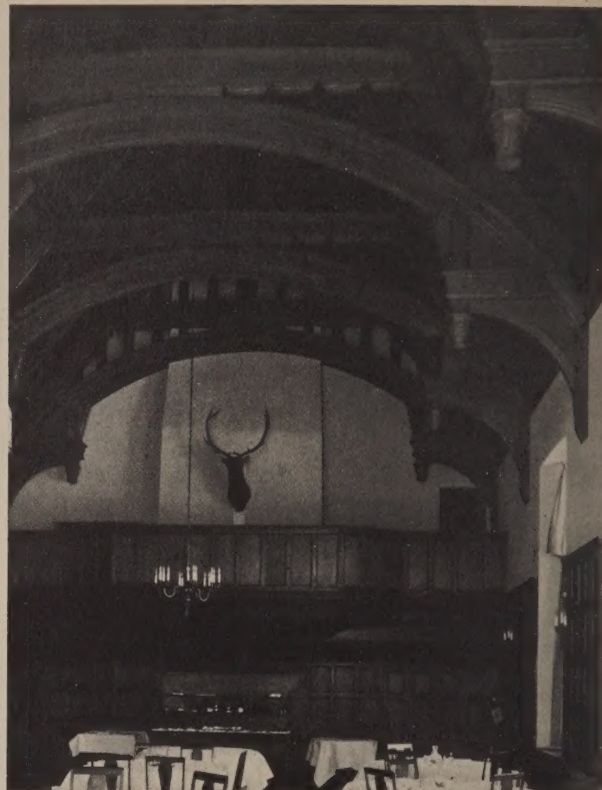


*House of  
H. H. Rogers,  
Southampton,  
Long Island,  
Office of  
John Russell Pope*





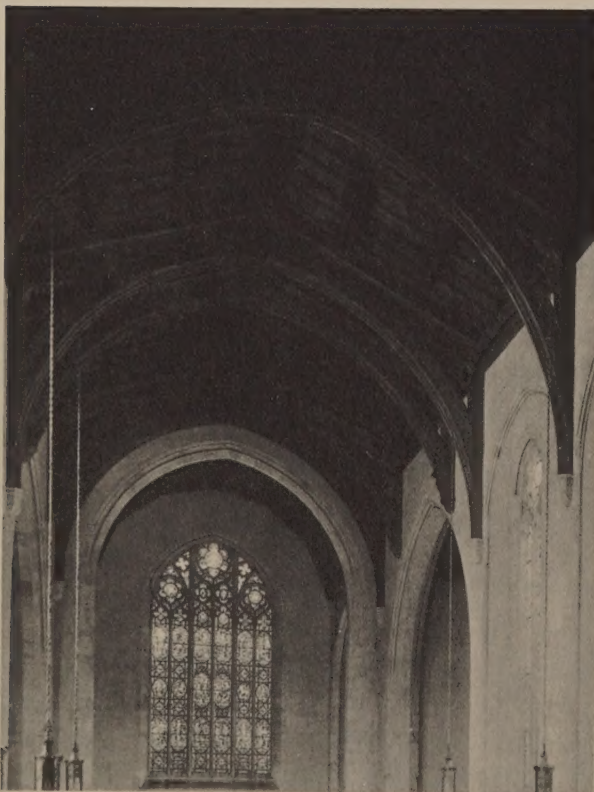
*House of George E. Hardy, Fishers Island, N. Y.  
Van Pelt, Hardy & Goubert*



*Kitchi-Gammi Club, Duluth, Minn.  
Bertram G. Goodhue*

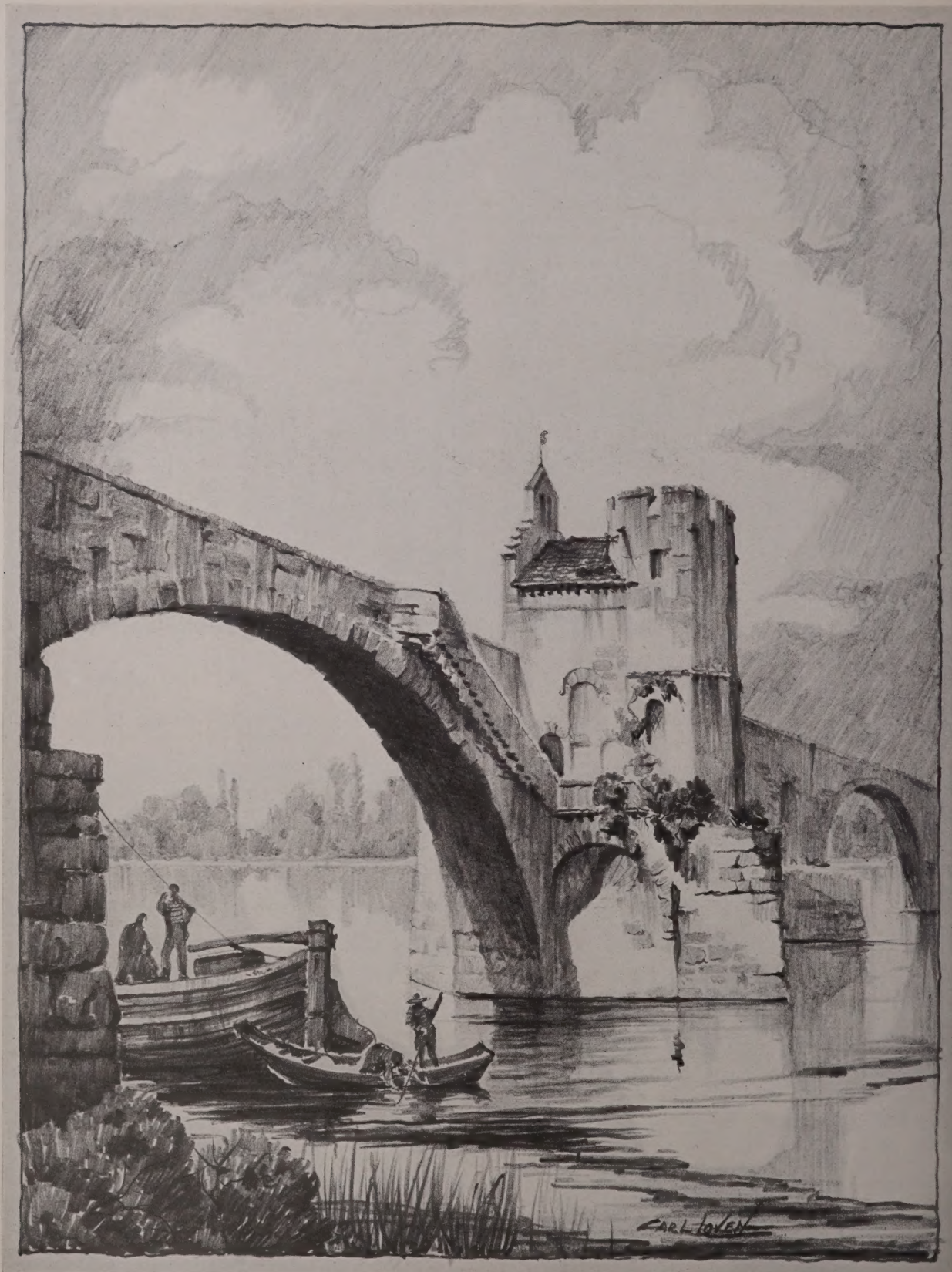
*First Congregational Church, Columbus, Ohio  
Office of John Russell Pope*

*Christ Church, Crambrook, Mich.  
Mayers, Murray & Phillip*









OLD BRIDGE AT AVIGNON

*From the pencil drawing, 7 x 9¼ in., by*  
CARL LOVEN

◀ ARCHITECTURE ▶